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No. 14

Ezra Benson Files Protest to Raise Freight Rates

Secretary Says Hike
In Marketing Costs
Would Hurt Farmers

WASHINGTON—Ezra Taft Benson, secretary of agriculture, has filed with the Interstate Commerce Commission a verified statement in opposition to recent railroad petitions for further increases in freight rates, with respect to agricultural commodities and farm production supplies.

Railroads had petitioned the ICC for a general increase of 22% in eastern and western territories, and for a general increase of 15% in the southern territory—including interim increases of 5 to 7% already granted.

Mr. Benson called attention to the general increases in freight rates since the end of World War II, as contrasted with the long decline in agricultural prices and farmers' incomes. Freight rates for agricultural products now are 83% higher than in 1946, and freight rates for animals and products are 104% higher, whereas prices received by farmers recently have averaged 4% below the 1946 level.

Mr. Benson said the higher marketing costs, including higher freight rates, have been one of the important reasons for the drop in farmers' incomes.

"It is generally recognized," he said, "that American agriculture faces a very difficult situation. Any further increases in freight rates or other marketing costs at the present time would make the problem even more serious."

USDA also filed a verified statement dealing with the generally declining level of earnings of farmers on 7 types of commercial family-operated farms, as contrasted with increasing earnings of Class I railroads in the U.S.

Sprayers Alerted For Projects in Western States

SAN FRANCISCO—An estimated three and a half million acres of forest land will be sprayed from the air this year in the western states to combat the gypsy moth, according to the Agricultural Aircraft Association, Inc. Another one million acres will be sprayed to fight the spruce bud worm.

Contracts for spraying this land are now being considered by the regional offices of the United States Forest Service, and individual contracts will be for not more than 500,000 acres. Other stipulations include ability of aircraft to climb fully loaded at not less than 300 feet per minute and dump valve sufficient to discharge load in less than 10 seconds.

WASHINGTON WIRE

Good Year Seen for Plant Food Sales Despite Soil Bank Crop Withdrawals

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON—Evidence reaching here from trade sources reveals that there will be as good or better than last year's business in the plant food industry, notwithstanding the soil bank operations of the U.S. Department of Agriculture this year.

First it may be admitted that the cotton-tobacco contributions to the soil bank this crop year may look like a minus sign on fertilizer sales.

On balance the plant food industry seems headed for a good or a better sales year than last, despite some bad spots. That is the opinion of executives here who know the agricultural industry as well as the effects of congressional action as of this date.

Here is the top opinion available here as of this week.

Senate Passes Measure to Expand USDA Contingency Fund Pest Control Work

WASHINGTON—The Senate has amended the U.S. Department of Agriculture Organic Act of 1944, as amended, to include within its provisions plant pests and diseases such as imported fire ants, soybean cyst nematodes and witchweed.

This change in the law would make available to the control division of USDA money from its contingency funds to conduct a campaign in co-operation with state and local governments to isolate these pests and diseases where they are now found and

to begin an attack on them where they now exist.

The purpose of this amending legislation is to permit operations by USDA before these pests and diseases reach epidemic proportions which would ultimately require large appropriations of money.

With the passage of this measure USDA would be enabled to confer with local officials, livestock producers and other interested farm groups to determine a course of action and to allocate USDA pest control funds from its contingent account.

The House Agriculture Committee has already favorably acted on a companion bill in that chamber. It may now be expected that it will be fully approved by Congress and sent to the White House where signature seems assured.

In advocating the amendment to the existing law, Dr. M. R. Clarkson, deputy administrator of the pest control branch of USDA, told Congress that the fire ant, while known in this country in areas along the Gulf

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Fire Damages South Norfolk Plant Of F. S. Royster

By HENRY S. FRENCH
Croplife Editorial Staff

NORFOLK, VA.—An early-morning fire struck the South Norfolk plant of the F. S. Royster Guano Co. here April 3, knocking out the wet mixing plant and rock crushing machinery, and 40% of the fertilizer storage.

W. T. Wright, vice president, commenting on the fire, emphasized that though damage was heavy, shipments of Royster products will not be interrupted.

"If we can clear the debris from the railroad tracks we can be shipping from the plant involved in the fire by April 4," he said soon after the fire. "We already had enough superphosphate made to last all season. If necessary, we also can fulfill orders from additional plants at Wilmington and Charleston, and we have a second plant adjacent to Norfolk at Money Point, Va."

Mr. Wright said that some higher grade material was lost and some water damage was done to some stored material. He said the fire apparently began from spontaneous combustion. It was discovered around 6 a.m. and took three hours to bring under control.

ESA Branch Discusses How To Recommend Insecticides In Keeping With Miller Law

— See Editorial on Page 22 —

By LAWRENCE A. LONG
Editor of Croplife

DES MOINES, IOWA—Entomologists and pesticide industry representatives from many parts of the country were present at the 12th annual conference of the North Central Branch of the Entomological Society of America at the Savery Hotel, here, March 27-29. Some 350 registered for the event.

Topics discussed during the three-day meeting ranged from insect rearing and testing, to a final question and answer session on the residue

problem. Sectional meetings included forest, forage crop, fruit and stored product insects; medical and veterinary entomology; and physiology and toxicology.

The discussion covering insecticide residue problems, under the chairmanship of Dr. George C. Decker, Illinois Natural History Survey, Urbana, Ill., turned out to be both lively and informative. Speakers included Justus C. Ward, assistant head, Pesticide Regulation Section, Plant Pest Control Division, Agricultural Re-

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SOIL BANK SIGNUPS

WASHINGTON—More than 20.5 million acres of land had been put in the acreage reserve of the soil bank through March 22, according to preliminary reports from State Agricultural Stabilization and Conservation committees, the U.S. Department of Agriculture announced April 1. The sign-ups include 12,707,966 acres of wheat, 4,574,254 acres of corn, 3,019,746 acres of cotton, 204,348 acres of rice and 79,687 acres of tobacco.

Industry Patents

2,786,795

Fungicidal Trichlorodinitrobenzene Compositions and Methods of Manufacturing and Using Same. Patent issued March 26, 1957, to Waldo B. Ligett, Pontiac, Calvin N. Wolf, Detroit, and Harry R. Dittmar, Royal Oak, Mich., assignors to Ethyl Corp., New York. A novel bioregulant composition consisting essentially of up to about 10 weight percent 1,2,3-trichloro-4,6-dinitrobenzene and a fungicidally inert adjuvant as a carrier therefor.

2,786,796

Method of Repelling Flies with Di-butylphenyl Monoether Polyglycols. Patent issued March 26, 1957, to Vivian H. Melass, Lake Jackson, Texas, assignor to The Dow Chemical Co., Midland, Michigan. A method for

repelling flies which comprises applying to the surface to be protected, a dibutylphenyl monoether of a polyglycol, said polyglycol containing 8 to 10 oxyalkylene units and at least three of said units being oxypropylene units.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

Thridol, in capital letters, for herbicides. Filed July 19, 1956, by Monsanto Chemical Co., St. Louis, Mo. First use July 12, 1956.

Vegedex, in capital letters, for herbicides. Filed July 19, 1956, by Monsanto Chemical Co., St. Louis, Mo. First use July 12, 1956.

Sum-R-Gard, in capital letters, for combined crabgrass, weed killer, and

fertilizer. Filed Aug. 2, 1956, by Soil Builders International Corp., Greenwich, Conn., now by change of name, to Aluminum and Chemical Corp. First use June 1, 1956.

Orcoa, in heavy capital letters, for organic fertilizer. Filed July 20, 1956, by Organic Corporation of America, Pittsburgh, Pa. First use on or about July 3, 1956.

Minnesota Sales Up In Last Half of 1956

ST. PAUL—Fertilizer sales during the last half of 1956 in Minnesota totaled 90,306 tons, compared with 61,371 tons in a similar period in 1955, according to the Division of Feed and Fertilizer of the Minnesota Department of Agriculture.

Sales of mixed goods in the 1956 period totaled 71,328 tons, up from 49,108 tons from the 1955 period, while sales of materials in the last half of 1956 increased to 18,978 tons from 12,263 tons in the 1955 period.

Ray Munson New Head of Wisconsin Anhydrous Group

CAMBRIDGE, WIS.—Ray Munson of Cambridge, Deansville Nitro Service, was elected president of Wisconsin Agricultural Ammonia Assn. at the group's spring meeting here recently.

Other officers named are Groenthal, Nitrogen, Inc., Cross Plains, vice president, and R. Strid, Strid Grain Co., Green Bay, executive secretary and treasurer. Fred Henderson, Menomonie, was named to the board of directors.

C. J. Chapman, soils professor at the University of Wisconsin, gave a welcoming address. He said there was a vast potential for fertilizer use in Wisconsin and stressed the use of nitrogen for low cost per-unit fertilizer production.

The annual report of the association was given by G. A. Davis, Coulee Chemical Co., La Crosse, retiring president, and Mr. Strid. They mentioned 1956 activities in insurance, planning and sales and advertising, and told of work with the Wisconsin Industrial Commission to provide and promote better safety rules for handling anhydrous ammonia.

Also on the program were several talks, a panel discussion by cannery industry representatives on use of ammonia on truck garden crops at a trade show.

J. D. Campbell, Olin Mathieson Chemical Corp. agronomist, was guest speaker. He stressed the importance of knowing the soil for proper application and maximum results from fertilizer. He told how a plant demand for food changes as it grows.

Winter and Spring Rains Brighten Crop Outlook in Texas

COLLEGE STATION, TEXAS—Winter and spring rains throughout most of Texas have given farmers the best hopes for a crop in several years. G. G. Gibson, director of Texas Extension Service, says district agents say the drought is broken but farmers have more water in the ground than in eight years.

Cotton planting has been completed in the Lower Rio Grande, and is continued rapidly in other parts of South Texas. Farmers in Central and West Texas have planting moisture in most areas, and are now marking time until the soil becomes warm enough for planting.

Whereas cotton prospects are bright, there is little hope for wheat. Much of the winter wheat in the Panhandle died, though fields that survived should respond rapidly to the recent moisture.

The moisture has had little effect on the irrigated sections of West Texas, because farmers don't use the pump for anything but a soaking rain. Rains of less than an inch are often discounted altogether.

Several new areas of vegetable will be planted the next few weeks as farmers seek to offset cotton losses. In cantaloupes, carrots and onions they hope to find a second cash crop that will justify heavy expense of pumping.

J. F. SHORT LEAVES POST
PORTLAND, ORE.—J. F. Short, Oregon director of agriculture, terminated his position to become a ranch broker specializing in sale of livestock ranches in the western states. Mr. Short submitted his resignation after Gov. Holmes was elected last fall, but at the governor's request agreed to stay on temporarily. In January, Gov. Holmes announced that Robert J. Stewart, state representative, would become director of agriculture when the legislature adjourns.



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KANSAS CITY, MO.—500 West 39th St.
MINNEAPOLIS, MINN.—212 Sixth St. South
NEW YORK, N. Y.—80 Broadway
OMAHA, NEB.—6th Floor, WOW Building
PASADENA, CALIF.—330 Security Bldg.

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SPOKANE, WASH.—521 East Sprague
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NORTH CENTRAL ESA MEETING

(Continued from page 1)

search Service, USDA, Washington, D.C.; Clifford C. Roan, Kansas State toxicologist; Arthur W. Lindquist, USDA, Washington, D.C.; Dr. E. F. Knipling, Entomology Research Division, ARS, USDA, Washington, D.C.; and a two-man panel with Dr. Ray Hutson, Michigan State College, as moderator. Appearing on the panel were Dr. Decker and Stirling Kyd, the latter extension entomologist, University of Missouri, Columbia.

Dr. Ward reviewed the events leading up to the adoption of the Miller amendment to the Food and Drug Act. These milestones included the numerous "scare" type articles appearing in newspapers and magazines, the discovery that small residues of DDT may be present in milk under some circum-

stances; and the various investigations of 1950 and 1951.

Following adoption of the Miller amendment in July, 1954, numerous extensions were granted to Oct. 19, 1955, mainly to justify use of materials through the 1955 growing season. Labels were brought up to date, and for the 1956 growing season, the principle was in effect that the grower would be safe if he followed the registered label precisely.

During the summer of 1956, however, the pesticide regulation section undertook a review of the uses of pesticides on raw agricultural commodities registered under the Federal insecticide, fungicide and rodenticide act. Completion of the survey revealed that:

1. Tolerances are lacking for

many chemicals in common use on forage crops.

2. Tolerances are lacking for many chemicals used on meat or dairy animals.

3. Many chemicals have tolerances on only a small percentage of the uses which have been registered.

4. Adequate proof that there are no residues from uses of chemicals in accordance with registered directions is not available for any large number of those not covered by tolerances.

Under the law, Dr. Ward said, any residue of a chemical on a crop for which no tolerance has been established, is an illegal residue, unless the chemical has been declared safe or has been exempted from the need for a tolerance.

Thus, he pointed out, the matter of proving that no residue exists on such a crop has become an important factor. In this connection, the Food Protection Committee formed a sub-

committee to investigate the preparation of what might be set as a "technical zero" figure.

It was found, however, that basis could be established for a "technical zero," since the pharmacological differences between various pesticides made a logical zero figure for one potentially hazardous for another. "Accordingly, each pesticide must be considered separately and the present trend is to break it down still further and consider each use of each poison as an individual problem," he said.

This situation is one in which experiment station or extension service worker must anticipate almost revolutionary changes in thinking. Dr. Ward pointed out. "He must learn to limit his recommendation to uses with tolerances, exemption safe chemicals, or ones where residue is left. He must look ahead, taking part in a team effort, where the pharmacologist and the chemist will assume greater responsibility deciding what chemicals may be used and how they must be handled.

"It seems obvious that a recommending agency must watch carefully to avoid setting spray schedules specifying other uses of chemicals which would risk the contamination of raw agricultural commodities that they could be subject to seizure. This again emphasizes the importance of compliance with the new law as completely and promptly as possible.

"We believe that the force of public opinion favors such action. We believe also that there will be an inevitable delay in getting pesticide recommendations registered labeling in line, but we are also convinced that progress is being made," Dr. Ward continued.

He added that when the summary of pesticide uses has been released it will be possible to see more clearly the extent of the problem. "We are expecting a rather large increase in our work based on a voluntary review of labels by the industry," he said. "We anticipate an increasing number of petitions; some of which may well be initiated by interested parties other than the manufacturers."

That the industry has not been complacent was emphasized by Dr. Ward. Many petitions are being filed and are under consideration, he said, and added that looking forward, it is apparent that the new law will require major changes in pesticide handling and in the basic philosophies of research, extension and industry people.

Aggressive programs of toxicology are being set up in recognition of the need for broader knowledge about the hazards of life in a chemical age. "It is inevitable that more studies on pesticides will be included in the program as it formally gets underway," he said. "Until more facts are available for many pesticides, recommendations may have to be withheld and certain registrations corrected to be sure we stay within the new law. It is certain that many labels must be changed."

Dr. E. F. Knipling discussed the use of insecticides as of "Today, Tomorrow, and Ten Years Hence."

The foremost problems of the present time, he said, lie in the field of toxic residues and in making recommendations that will control insects without danger of illegal residues. "The Agricultural Research Service has given careful consideration to the matter in attempting to determine what use should be continued for the 1957 season," he said. "It has been decided to continue to recommend uses except those that are known to produce residues in milk and other commodities for which tolerances have not been established. Recommended uses that cause residues in excess of established toler-

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FOR AGRICULTURE

TPA 213

es will be withdrawn or suitably modified," the USDA entomologist said.

In line with the above decision, it is possible to continue for this season most of the recommendations that have been made in the past," continued. "However, several important uses will be deleted, or recommendations substantially modified. These include DDT sprays for controlling flies, lice, and ticks on beef cattle; toxaphene for controlling flies on cattle; lindane sprays for control of lice and mites on dairy cattle, and methoxychlor for the control of insects on dairy cattle. If and when tolerances are established which can be met, recommendations will be made with such modifications as may be necessary."

Tomorrow's problems will be focused largely on gathering residue data required for those uses that are open to question, he opined. This will require the combined effort of research workers in industry, state experiment stations, and federal research laboratories. "For example," he said, "we must obtain residue data on rotenone when applied to dairy and beef animals for livestock pest control." Additional data are needed on many other materials, as well, particularly on forage crops, it was noted.

As to where the industry will be in years hence, Dr. Knippling listed a number of things that must be done to overcome obstacles that lie in the way of progress. Among these, he said, is the necessity to provide a balanced program on biological evaluation of insect control chemicals and on residue studies.

Another matter is to conduct adequate studies on the pharmacology of insecticides and early translation of findings into approximate magnitude of permissible tolerances. In expanding this subject, he said that for maximum efficiency, it will be necessary for the pharmacologists to translate their findings into approximate magnitude of tolerances before, not after, intensive work has been done on determining entomological effectiveness and the amount of residues that occurs on harvested commodities.

Other needs for greatest progress in the years ahead, as seen by Dr. Knippling, include the following:

Establishment of tolerance levels that apply to a wider range of insect control recommendations and commodities; need for safe but practical tolerance in special foods; and need for educational programs to assure proper compliance with recommended insecticide usage.

As part of the section on cereal crop insects, Dr. J. H. Lilly, Iowa State College entomologist, described the progress of insecticide-fertilizer mixtures in that state, showing tremendous increases in usage since 1951 when only 10 acres were treated with such a mixture. In 1955, by contrast, some 668,250 acres were treated, and 1,270 acres in 1956.

Here is the way the mixtures have increased beyond the ten acres treated in 1951, according to Dr. Lilly: in 1952, 15,000; in 1953, 200,000; in 1954, 2,500.

During the same years, the total acres treated with soil insecticides have shown even greater increases. Beginning with a modest 25 acres in 1951, the total rose to 25,000 in 1952; to 325,000 in 1953; to 600,000 in 1954; to 1,244,835 in 1955; and 1,030,070 in 1956.

Dr. Lilly pointed out that the strongest argument for the use of insecticides with fertilizers is their convenience. Cost of application remains high regardless of how little insecticide may be used per acre, a fact that tends itself to accomplishing two objectives in a single application.

"Both real and imaginary problems arose when insecticide-fertilizer mixtures came into common use," he said. "The problem of having the

right insecticide and dosage in enough fertilizer grades to meet the needs of all farmers seemed insurmountable to some. Actually experience in the Corn Belt has not confirmed this belief. The 10-pounds-per-ton level of insecticide, designed to give an insecticide dosage of $\frac{1}{2}$ pound per acre with 100 pounds per acre of starter fertilizer has worked surprisingly well. Most dealers carry it in the 2 or 3 different grades that are most popular as starter fertilizers in their sales areas. Many fertilizer manufacturers and some dealers are set up to do custom mixing."

Dr. Lilly reported that one Iowa producer who has been enthusiastic about this practice since its inception insists that his greatest problem has been to keep the mixtures separate so that they would not be sold for the price of regular fertilizer. This he now does by packaging it in bags that are distinctively different from those used for any other fertilizer. The experience of

another large and reputable fertilizer company selling in Iowa is revealing in a different way. In the early days this company opposed the practice of mixing insecticides with fertilizer with genuine fervor. Later, they began to utilize the mixtures as a gimmick to increase fertilizer sales, a practice they have since been following actively.

"A surprisingly consistent preference for the starter fertilizer mixtures has been evident in Iowa since 1952. Undoubtedly the availability of the mixtures and the commercial promotion of them have speeded the adoption of soil insecticides. Apparently the trend in favor of the mixtures has not been evident in most other Corn Belt states, although it has long been popular in the Southeast," he said.

"Custom mixing of insecticides and fertilizers may increase their use and versatility. There is good evidence that corn rootworms can be controlled under some conditions with less

than $\frac{1}{4}$ lb. of insecticide per acre by this method. In Iowa we think of this as a minimum dosage for most of the other insects that cut the stands and yields of corn, and for rootworm control under severe conditions. Where wireworms are a major problem a minimum of one pound per acre is needed for commercial control by this method. Therefore there is interest in and need for more than a single dosage level for use on corn in the North Central States," he concluded.

The present status, value, accomplishments and future plans for economic insect surveys were discussed in a paper by L. G. Davis, assistant head of the insect survey section of USDA, Washington, D.C. He reviewed the tremendously stepped-up program of intercepting economic insects and plants at various points of entry into the U.S., and observed that the vigilance on the part of government must not be reduced in any way.

In support of this statement, Dr. Davis presented statistics to show

(Continued on page 21)

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John W. Wastcoat

APPOINTED — John W. Wastcoat has been appointed general sales manager of the Burrows Equipment Co., Evanston, Ill., announces Parke Burrows, president. Mr. Wastcoat has had 20 years of experience in the business field, mostly in sales work.

Texas Fertilizer Tonnage in Fall Of 1956 Shows Gain

COLLEGE STATION, TEXAS — Total fertilizer tonnage sold during the fall of 1956 was 5% higher than 1955 figures and about 23% below the 1950 total, reports J. F. Fudge, Texas state chemist.

Although there was significant decreases in tonnages of fertilizers sold, Mr. Fudge says the concentration was such that tonnage of primary components used during this period was greater than ever before. Sales of mixed goods were about 4% over 1955, and one-third greater than 1950. Mr. Fudge also points out that while 1956 sales of materials were only 52% as great as 1950, they were 5% over sales made in 1955.

For the first time, sales of 10-20-10 were significantly greater than 5-10-5. Sales of 5-10-5 were 17% lower than a year ago, but 10-20-10 sales were 39% higher, Mr. Fudge says. Seventy-five percent of the total mixed goods tonnage sold and primary components used during the fall of 1956 were goods of 1-2-1 ratio with an average composition of 8-16-8.

Superphosphate sales were down approximately 7,500 tons and rock phosphate was down about 1,000 tons. However, Mr. Fudge says, the tonnage of materials supplying both nitrogen and available phosphoric acid was much greater during 1956 than any previous year.

Mixed goods accounted for 83% of the total tonnage sold in East Texas and about 40% of the Gulf Coast and North Central totals, but constituted less than 4% of West Texas sales. East Texas used 53% of the nitrogen, available phosphoric acid and potash in mixed goods while West Texas used 82% of the total tonnage of anhydrous ammonia.

Average composition for the state was about 25-15-0. Mr. Fudge says this is significantly higher than a year ago and markedly different from the 4-20-0 average of 1950.

Insecticide Use

BATON ROUGE—Louisiana farmers used more than 27,000,000 lb. of insecticidal dusts and 336,000 gallons of spray concentrates in 1956, according to the Louisiana State University Agricultural Extension Service. Use of calcium arsenate in 1956 amounted to more than 9,000,000 lb., compared with 1,840,000 lb. in 1955.

Panels on Potash, Micro Nutrients Set For California Meeting

FRESNO, CAL. — Two panel discussions are included in the program of the fifth annual California Fertilizer Conference, sponsored by the Soil Improvement Committee, California Fertilizer Assn., and scheduled for April 14-15 at Fresno State College here.

The panels will be held the afternoon of April 15. One will be a discussion on micronutrients, moderated by Dr. D. G. Aldrich, Jr., University of California, Davis. Panel members will be Dr. John Lingle and Dr. Kiyoto Uriu, both of the University of California at Davis; Dr. Walter Reuther, Citrus Experiment Station, Riverside, and Dr. Arthur Wallace, University of California at Los Angeles.

Dr. J. E. Knott, University of California, Davis, will moderate a panel discussion on potash. Members will be Dr. W. E. Martin, University of California, Berkeley; Dr. T. W. Embleton and Dr. O. A. Lorenz, both of the Citrus Experiment Station, Riverside; Forrest S. Fullmer, American Potash Institute, Newport Beach, Cal., and Dr. Herman Timm, University of California, Davis.

Banquet speaker the evening of April 15 will be Dr. Firman E. Bear, New Brunswick, N.J., editor of Soil Science, who will talk on "A Forward Look at Farming."

The conference program the morning of April 15 will include:

Welcome by Jack Baker, Bandini Fertilizer Co., Los Angeles, association president; a discussion of the agricultural program at Fresno State College by Lloyd Dowler, dean of agriculture; "Plant Analysis as a Guide to Fertilization," by Dr. Albert Ulrich, University of California, Berkeley; a talk on soil conditioners by Dr. R. E. Warnock, California Spray Chemical Corp.; "Current Topics of Interest," Robert Z. Rolins, chief of the California Bureau of Chemistry, Sacramento; "Potash Responses in Deciduous Orchards," Dr. Omund Lilleland, University of California, Davis, and "Potash Sources and Products," M. E. McCollam, American Potash Institute, San Jose, Cal.

Earl R. Mog and J. H. Nelson, of the association's Soil Improvement Committee, are program chairmen.

A dinner meeting of the University of California Fertilizer Committee and the Soil Improvement Committee of the association, will be held the evening of April 14.

Sesame Successful In Texas Cotton Area

OLTON, TEXAS—Sesame is proving a good cash crop in this predominantly cotton area, according to three farmers who had above average success with it last year.

Paul Spain, who planted 32 acres in sesame and harvested 1,155 lb. of seed per acre, says the crop grossed over \$100 and acre. Another grower, Donald Spain got over 1,000 lb. to the acre.

Since this was only the first year these farmers have tried sesame, they believe that yields can be raised as better farming methods are devised.

Donald Spain used 45 lb. of nitrogen and 45 of phosphorus to the acre. From this experience he thinks that a little extra phosphorus will encourage heavier seed production. The only insect found in damaging numbers was the flea hopper, which was eradicated with one spraying from an airplane.

Mr. Spain says that sesame can be rotated with cotton without causing the loss of production that results when cotton follows cotton. These farmers along with several others plan to grow a larger acreage of cotton next year.



Everywhere
.. they'll find
EARNIE

Follow any Midwest or West Coast Farmer on his daily round...you're sure to bump into Earnie! An intensive, wide-spread advertising campaign carries Earnie everywhere...He's working and working hard—to build more sales, bigger sales and higher profits for every Elephant Brand fertilizer dealer!

GET MORE FROM YOUR LAND

* IN FARM JOURNALS...

Earnie's "Fertilizer Tips" will appear time and time again in farm journals and special farm magazines throughout the Midwest and Pacific Coast areas.

* ON THE RADIO...

This Spring, radio stations throughout the principal Midwest and North West agricultural areas will carry an intensive schedule of Elephant Brand announcements.

* ALONG THE HIGHWAY...

Earnie will greet American Farmers from the road-sides on dozens of distinctive, strategically located billboards.

* AND AT THEIR ELEPHANT BRAND DEALER

They'll find Earnie here, too, ready to help complete the sale with wall cards, pamphlets, samples and other dealer aids...selling *more* Elephant Brand this year than ever before!

EVERY ELEPHANT BRAND DEALER CAN HELP EARNIE BUILD SALES... WITH ADVERTISEMENTS OF THEIR OWN IN THEIR LOCAL NEWSPAPERS AND RADIO STATIONS. ELEPHANT BRAND'S NEW DEALER AD SERVICE IS NOW AVAILABLE. ASK YOUR ELEPHANT BRAND FERTILIZER DISTRIBUTOR FOR DETAILS.

ELEPHANT BRAND

HIGH ANALYSIS FERTILIZERS

11-48-0	13-39-0	16-20-0	23-23-0	24-20-0
27-14-0	6-24-24	8-32-16	10-32-10	12-12-12

NITRAPRILLS (Ammonium Nitrate) AMMONIUM SULPHATE
TRIPLE SUPER PHOSPHATE

Exclusive U.S. Sales Agent for Elephant Brand Fertilizers:
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5718-M

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OREGON OFFICERS—Fred Trullinger, Jr., Portland (Ore.) Seed Co., manager (center), was named Oregon Feed & Seed Dealers Assn. president at the group's 26th annual convention March 14-15 at Portland. He is shown looking over the convention program with Harold Davis, vice president, Buchanan-Cellers Grain Co., McMinnville (left), and the new secretary-treasurer, Fenn Emerson, Chas. H. Lilly Co., Albany.

Ignorance on Customer's Part Called One of Dealer's "Rough" Competitors

PORTLAND, ORE.—Ignorance on the part of the farmer was listed as "one of the farm suppliers' roughest competitors," by Eugene C. Holcombe, advertising and sales promotion director for the Borden Co., special products division, New York, during his thought-provoking talk before the closing session of the 26th annual Oregon Feed & Seed Dealers Assn. convention held here March 14 and 15.

Mr. Holcombe traced this ignorance to the farmer's obsession with saving money by cutting corners in his various operations, and he said that advertising was the key to successfully meeting this competition.

He told the group that "there are a lot of us who, in a sense, are competing with ourselves by going along in the familiar, comfortable, old pattern day after day because nothing much happens to root us out and shake us up."

The advertising executive declared that the successful farm dealer must continually examine his work habits, methods and sales effort budgets to make sure the one competitor over whom we do have control, ourselves, is not costing us business.

He emphasized that nothing but advertising will build the demand required to make it possible for operation at a level where the merchant's unit cost is lowest.

"Some people expect miracles from advertising. They run an ad and step back from the door to avoid being killed in the rush. It's too bad, but advertising doesn't as a rule, strike like lightning," Mr. Holcombe said. "To expect a single advertisement to pay is as foolish as to hope to grow fat from a single meal. Advertising does not jerk; it pulls. It begins very gently at first, but the pull is steady."

In answer to the question as to how much should be spent on advertising, Mr. Holcombe said he generally suggests to "spend every dime you can afford."

Gradual but steady changes in the use of seeds were outlined to the group by E. R. Jackman, Oregon State College range management specialist. He said the increased use of turf grasses is of real importance to Oregon producers and handlers since they produce more of these than growers in any other state. This increase is due to suburban living, and more playing fields, golf courses and roadside plantings.

In regard to grazing alfalfas, the veteran agronomist said: "We ain't seen nothin' yet," since nearly every

western state college is working hard on their development and a lot of new varieties will be available soon. He pointed out that nomad and rhizoma are already available and there will likely be strains from every section of the U.S. on the market within 10 years.

"Seed growing is changing from a haphazard, salvage business into a regular farm enterprise with each grower specializing in his favorite kind," Mr. Jackman said. "This will mean cheaper and better seed, and it is a way that Oregon producers have been operating for quite a while."

He indicated there will be a steady growing demand within the next 20 years or more for grazing type alfalfas and dry-land grasses for the improvement for some 700,000 acres of western state ranges. He said range improvement is just starting and that the demand will not be fast.

"There is a nation-wide trend towards alfalfa production now that there are better adapted varieties, legume silage, new pasture methods and a better knowledge of fertilizers. These have all combined to cause alfalfa to replace red clover, alsike, timothy and cereals for forage," the range management specialist said.

America's tremendous population growth, almost 17 million people in the last five years, must be matched by spectacular research programs to meet an ever-growing demand for products of farms and factories, J. Roger Deas, American Can Co.'s Pacific division representative, told the gathering.

He emphasized that America's rising standard of living presents industry with the task of supplying new and better products in ever greater volumes.

The well-rounded program also included a morning-long fertilizer conference. During this session J. D. Patterson, assistant chief of the state department of agriculture, explained changes from oxide to elemental in fertilizer analysis.

Grant Braun of the American Potash Institute told of potash deficiency symptoms, and Tom Jackson, Oregon state college extension service soil specialist, gave fertilizer recommendations for the Willamette Valley.

There were also talks on the cost of doing business in the seed industry, and an explanation of various religions by Dr. Marcus Bach, State University of Iowa school of religion.

Tom Sullivan of Portland's Continental Grain Co., was general chairman.



WORLD REPORT

By **GEORGE E. SWARBRECK**
Cropplife Canadian and Overseas Editor

The blockage of the Suez canal has proven beneficial to the Japanese fertilizer manufacturers. This crisis in the Middle East saw European prices skyrocket while delivery times had to be extended. Rates across the Pacific also shot up, thus impeding the ability of American and Canadian manufacturers to sell competitively in the Southeast Asian market.

In chief demand are ammonium sulfate and urea; the producers say they are swamped with orders.

J. L. Mutter, Canadian commercial counsellor in Tokyo, says there is no

doubt that the demand can be fulfilled, for the Japanese fertilizer industry rates third in world production, outranked by only the U.S. and Western Germany. The industry has developed rapidly since the end of the war, particularly in the production of ammonium sulfate. Other nitrogen fertilizers produced include urea, calcium cyanamide, and ammonium chloride. The output of phosphate fertilizers has also shown a steady rise.

The Japanese exporters report orders of 300,000 tons of ammonium

sulfate for Formosa and 50,000 tons of urea for Red China.

During the present fertilizer year—it ends on July 31, 1957—the Japanese hope to participate substantially in the import targets of Indonesia (800,000 tons of ammonium sulfate), Pakistan (180,000 tons of ammonium sulfate and 30,000 tons of urea), and India (100,000 tons of ammonium sulfate and 10,000 tons of urea). Other countries showing interest are Burma, Thailand and the Philippines.

Canadian Pyrites Sales Problem

Canadian pyrites consist of flotation concentrates with a particle size of about 200 mesh and this creates a dust problem in the German plants. There is thus some resistance to the Canadian material because it is so fine and dusty. Some users have admitted Canadian pyrites with the coarser European variety but this

does not appear to have provided complete answer to the problem.

One German manufacturer has suggested that the Canadians granulate or pelletize their material. This, he feels, would lessen the sales resistance in Germany.

German Demand For Pyrites

The West German need for pyrites is growing rapidly, in line with greater call for sulfuric acid. Pyrites have been a basic ingredient for manufacture in Germany since 1840. At that time the high cost of natural sulfur from Sicily caused the manufacturers to find a less expensive material. Europe was rich in pyrites and experiments started.

The I. G. Farben combine was responsible for the earliest work and it established a supply for the producers.

The German mines produced more than 600,000 tons in 1955, but this was nowhere near enough to satisfy the demand. Other European countries supplied 1,100,000 tons.

From other countries came 854,000 tons of roasted pyrites containing copper. Canada provided 4000 tons of pyrites in 1955, and trade is expected to maintain its current expanding trend.

In the 80 years of pyrites use, Germans have used crude material with a particle size of 12 mm. Most of the old pyrites burners in the plants are designed to take the coarse material.

Indian Fertilizer Industry Expands

Indian officials say that their fertilizer industry should show an increase of 300% by the end of the second Five-Year Plan in 1961. The chemical industry only really got going during World War II but the number of factories, 174 in 1946, had jumped to 280 by 1951. Many of these have fertilizer divisions. The aim is to make India self-sufficient in fertilizers.

The government is continuing pressing for the increased use of fertilizers to up farm production. State of ammonia consumption shot up from 225,000 tons in 1950 to 600,000 tons five years later. The acceptance of other nitrogenous fertilizers has not been as widespread, but the government and the trade are persisting in their selling efforts. Three new factories are to be erected with government assistance.

Now the Shell Petroleum Co., Ltd., a British concern, has offered to build a nitrogenous fertilizer factory at Trombay, with a possible capacity of 225,000 tons of ammonium sulfate and nitrate a year.

Briefs . . .

During 1956 Spain produced 1,570,000 tons of superphosphate, the top fertilizer states.

The British government will increase its subsidy on nitrogen \$8.4 million effective July 1.

The use of nitrogenous and phosphate fertilizers in Turkey declined in the fertilizer year 1955-56, but there are signs that this year the use has been recovered and consumption will increase.

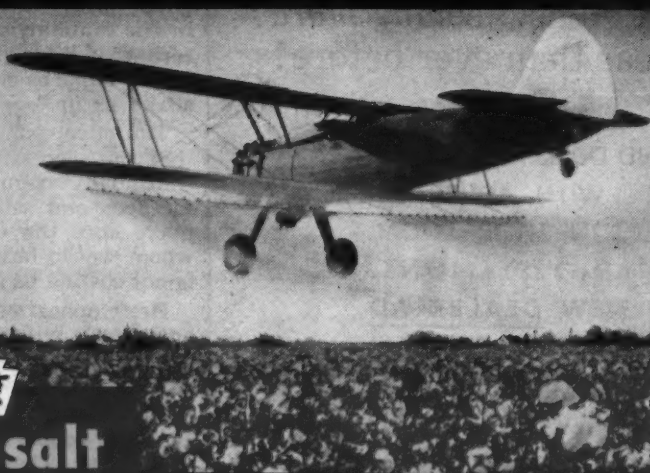
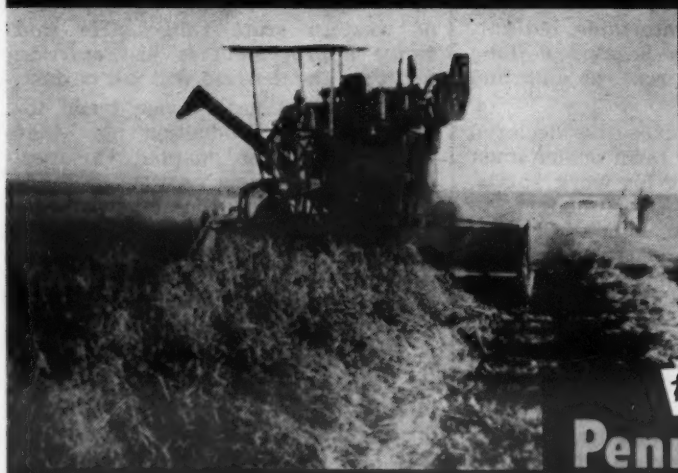
AGRONOMY DAY

SAN FRANCISCO—Progress in the fight against the alfalfa aphid will be discussed on Spring Agronomy Field Day on May 17 at the University of California at Davis. Sponsored by the department of agronomy, the day long event will feature talks on chemical and biological control of the aphid, breeding resistant strains of alfalfa, feeding aphid-damaged alfalfa to livestock and problems of dehydrating damaged alfalfa. There will also be short reports on cereal breeding.

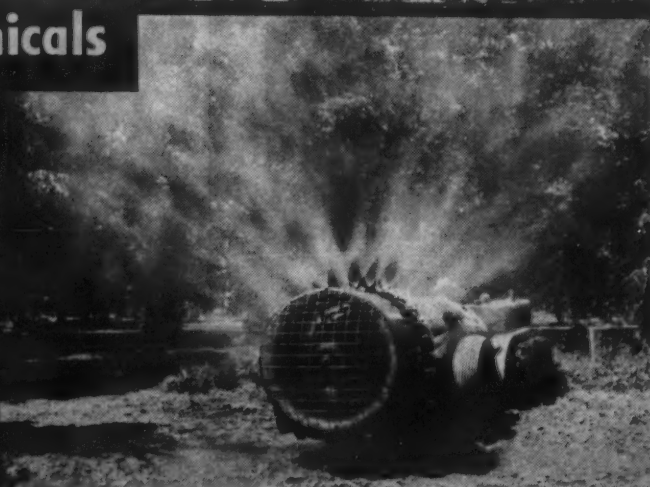
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FROM "FLYING SQUAD"

Idaho Dealers Hear Reports On Needed Minor Elements

PORTLAND, ORE.—Almost 500 fertilizer dealers who attended six meetings in Idaho in late February and early March heard a "flying squad" of plant food experts, including G. O. Baker, soil technologist, University of Idaho, talk about good health for Idaho soils.

Mr. Baker talked on the elements essential to plant growth, including minor elements, and said that he has found deficiencies in Idaho of nitrogen, phosphorus, potassium, sulfur, boron, and zinc. This past year's work indicates that molybdenum should be added to the list, he said. Further work is being carried on to determine if other trace elements are required and where in the state the proven deficient trace elements are needed.

In order to have a better understanding of the minor elements, Mr. Baker gave the following statement of each:

"Iron is essential for the formation of chlorophyll, so a deficiency of available iron results in a chlorosis of the leaves. This yellowing in trees and shrubs normally shows up first at the growing point and in severe cases the entire tree may become yellow.

"Iron deficiency is most severe in high lime soils, but is seldom a problem in the acid or neutral soils of northern Idaho.

"A deficiency of boron results in a stunting of growth and in severe cases death at the growing point. Clovers and alfalfa develop a reddish or a yellowish color at the growing point and further growth stops. In fruit trees the twig growth is shortened and in many cases dies. It is sometimes referred to as 'die back' of fruit trees.

"Boron deficiency is rather common on alfalfa, clover and fruit trees in northern Idaho. The deficiency is usually corrected by the use of agricultural borax or borated gypsum. The borated gypsum contains 10% borax equivalent or 10 lb. of borax per 100 lb. of borated gypsum.

"Zinc, like iron, is associated with the development of the green pigment in leaves. Thus a chlorosis of the leaf will result when it is deficient. In fruit trees a symptom is little leaf or rosette. Corn and beans yellow between the veins and normally it is the younger leaves that first show the symptom.

"Zinc deficiencies in Idaho have been identified in the Lewiston Orchards area and in southwestern Idaho.

"Zinc deficiency has become an important problem in the Columbia basin and is being corrected by applying 10 lb. per acre of actual zinc and plowing it under. This has been found effective for four or five years.

"Molybdenum is associated with the activity of nitrogen fixing legume bacteria, but is also related to chlorophyll formation. At present it appears that legumes are the only crops that have a molybdenum deficiency in Idaho. The general symptom is yellowing of the entire plant similar to nitrogen deficiency is cereals. The deficiency is more severe on badly eroded land.

"Manganese deficiency has not been

identified in Idaho. It is associated with chlorophyll formation so a deficiency will result in chlorosis or yellow areas between the veins of leaves. The veins remain green.

"Copper deficient soils in the U.S. are primarily the sandy soils of Florida and the peat and muck soils of Michigan and Wisconsin. No copper deficiency has been reported for the western states.

"Established as an essential element in 1954, very little is yet known of Chlorine."

Excesses of boron, molybdenum, copper or manganese can have a detrimental influence on plant growth or on livestock, it was pointed out. Therefore careful application is a necessity.

Mr. Baker and other flying squad members spoke in Coeur d'Alene, Lewiston, Caldwell, Twin Falls, Pocatello and Rexburg.

New Citrus Pest Appears In Orange Growing Areas

RIVERSIDE, CAL.—A new economic pest of citrus has appeared in three southern California orange-growing areas, an entomologist at the University of California Citrus Experiment Station has reported.

E. Laurence Atkins, Jr., associate specialist, said the western tussock moth, which formerly limited its attacks to apple, cherry, apricot, prune and walnut trees, along with certain ornamentals, did serious damage last season in two groves at West Covina. Less serious outbreaks occurred at Puente and in San Fernando Valley.

The West Covina infestation had 100 to 1,000 worms per tree on most of the two groves, Mr. Atkins said. All of the new spring flush of growth was destroyed on most of the trees. Newly set fruit was eaten into, damaging about 80 per cent of the total and causing heavy dropping of injured fruit.

At present the moth is still a minor pest, Mr. Atkins said, but it appears to be spreading. So far its attacks have been limited mostly to navel oranges.

Pacific Northwest Pest Control Group to Meet

PORTLAND, ORE.—Control of grain insects will be the featured topic during the annual Pacific Northwest Pest Control Operators Assn. meeting here April 29 through May 1, according to Claude Snow, the organization's past president. Convention headquarters will be in the New Heathman Hotel.

Mr. Snow said this is the first time the group has met in Portland. Meetings were formerly held on the Oregon State College and University of Idaho campuses. A state of Washington pest control group was recently organized at Tacoma with 22 charter members.

Wendy Fisher, Portland, is president of the three-state organization.

Although termites will come up for their share of educational discussion, many agricultural insect control problems will also be discussed, Mr. Snow said.

SHOP TALK



OVER THE COUNTER

By Emmet J. Hoffman
CropLife Marketing Editor

The rising costs of operating a fertilizer business are as frustrating as they are real. Selling expenses continue to rise. Credit, advertising, technical service, labor, utilities, practically all phases of a selling operation have increased in cost in recent years.

Likewise, the manufacturer as a rule pays more today for his raw materials, power, wages and equipment than he did a year or two ago. Distribution costs, including freight and truck charges and field distribution charges, have increased.

Yet, all is not gloom for the dealer. A statement by George Monkhouse, vice president, Shell Chemical Corp., San Francisco, offers

proof: "On an average, the price of nitrogen to the California farmer has declined by \$30 per ton—30¢ per unit—1½¢ per lb.—10% over the last five years and more than that in some areas." This is an excellent point for dealers to make to their customers and it can't be repeated often enough in advertising and in personal selling.

Mr. Monkhouse also offers some other suggestions for beating the increased cost of doing business, a "prescription for success" as he calls the pointers. They are:

1. Maintain an adequate margin of profit; don't be in a hurry to cut prices.

2. Fight to maintain your good customers in your most economical, or close to home, area of distribution.

3. Increase the number of customers by aggressive salesmanship, calling on the trade, hard work and efficient service. Talk benefits through proper fertilization rather than dealing on price.

4. Stand fast on an intelligent credit policy. Let the bankers handle seasonal credit arrangements—it is their business. Even 30 days for a risky account is throwing money away. For a doubtful account, cash in advance should be the rule.

5. Don't seek business outside your area of economical distribution. Beyond the limits of a well planned milk run, trucking costs go up in geometrical progression and can break you.

6. Strive to keep pace with modern trends of economical equipment, commodity handling and application methods. Set up a cost control system that shows what it costs to do business by areas, by size of acreage and types of product. In the case of ammonia dealers, it is vital to keep tab of the equipment turn-around time.

7. Train your salesmen to know your products, your policies and your objectives. See that they route themselves intelligently to make the most calls on the proper customers and prospects without waste of expensive driving time.

8. Set up reserves for property replacements and modernization. Depreciation is a real item of expense.

9. Make sure your bookkeeping system is adequate.

10. Explore and seize opportunities for diversification of your business, particularly in the slack fertilizer season; in other words, handle more profitable items to sell through existing facilities without increasing present overhead and without adding to the sales force.

"In conclusion, and to wind up on a more optimistic and positive note, the long range future is bright because all projected (fertilizer) consumption curves are going up," Mr. Monkhouse says.

Don't Neglect City Trade, Says New Mexico Merchant

HOBBS, N.M.—The average dealer may be overlooking some nice profits by not striving to build his town trade in fertilizer, insecticides and garden supplies, according to Ben F. Slaughter of Hobbs, N.M. This big increase in town trade has been partly responsible for Mr. Slaughter's growth from a hole-in-the-wall feed store seven years ago into one of the largest farm supply stores in the Southwest.

Recently he opened his new store which has 15 employees as compared to three which he used a few years ago. The new building of brick and stone is departmentalized with attractive island displays. Mr. Slaughter not only has a feed and fertilizer department but handles all kinds of garden and lawn supplies, small hardware and pet products.

"The farm business has its ups and downs," he said, "but the city trade is rather steady. Both types of customers use about the same things, because farm people are buying more lawn and garden seeds, mowers, shrubs and pet supplies."

He attributes some of the growth in business to advertising, and is especially on the lookout for novel methods of getting people into the store. Recently when he opened his big, new store he gave away numerous prizes. One was a pig-in-a-poke, which proved to be a Mexican wild hog, commonly known as a Javelina.

The startled winner was a country grocer. Quite pleased with his prize,

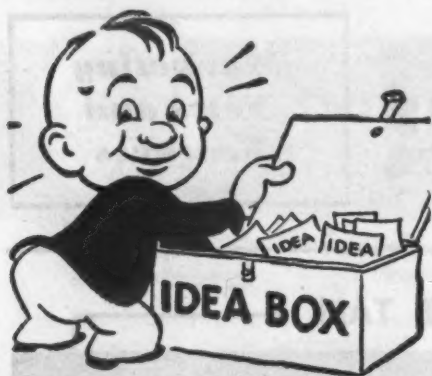
(Continued on page 10)

Ray Whitcomb New Pacific Northwest Plant Food Assn. Director

PORTLAND, ORE.—Ray Whitcomb, Link Distributing Co., Grandview, Wash., has been named a member of the board of directors of the Pacific Northwest Plant Food Assn. He succeeds Robert H. Allard, Pacific Agro Co., Seattle, who resigned.

Directors of the association have selected Oct. 3-5 for the association's annual convention. It will be held at Sun Valley, Idaho, Leon S. Kackson, Portland, secretary, reports.

Associate membership in the association has been approved for Northwest Nitro-Chemical, Ltd., Medicine Hat, Alberta.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6551—Fungicidal Paint

Charles Bowman & Co. has prepared new literature on its product, "Fungi-Chek," a non-toxic fungicidal vinyl latex paint that is said to produce a permanently bacteria-proof, fungus-proof surface. It is recommended for plaster, fibre boards, concrete, metal or wood. A two-color brochure presents a list of microorganisms against which the paint film is claimed to possess bactericidal and fungicidal properties. Copies of the literature are available by checking No. 6551 on the coupon and mailing it to this publication.

No. 6554—Lawn, Garden Kit

A lawn and garden kit, called by the trade name, "Robot Gardener," is a new product of the Leeds Chemical Products Co. It consists of a trisected chamber which attaches to any hose and sprinkler or nozzle. The chamber is then filled with bullet-like cartridges of fertilizers, weed killer and insecticide. The hose is then turned on and—automatically—the products fertilize the lawn, and act as weed, crabgrass and insect controls. The concentrated ingredients are mixed at a controlled rate in the chamber. The Robot Gardener is being in-

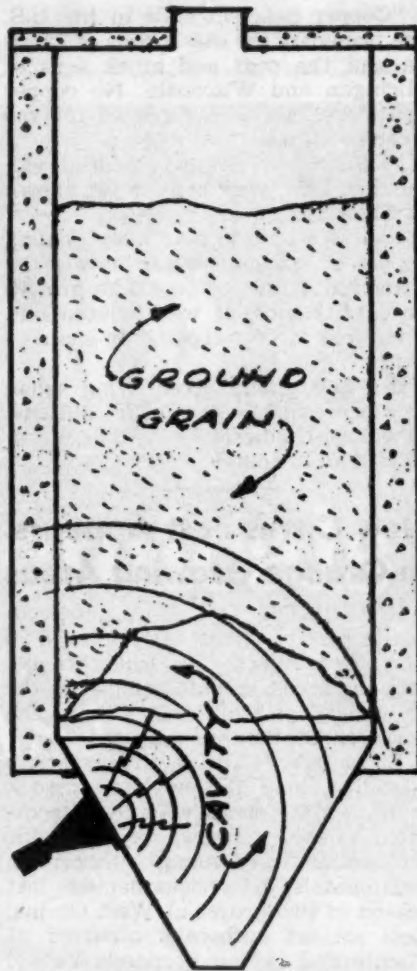
troduced in kit form which will include: Two pounds of fertilizer, (which treats 2,000 sq. ft. of lawn at one time), automatic chamber, weed killer, and insect killer. Get complete details by checking No. 6554 on the coupon and mailing it to Croplife.

No. 6557—Heptachlor

Literature about the Heptachlor advertising and sales promotion campaign in the western states for alfalfa weevil control has been prepared by the Velsicol Chemical Corp. The literature is part of a kit which contains an advertising schedule and other promotion material for this insecticide. Complete details may be secured by checking No. 6557 on the coupon and mailing it to Croplife.

No. 5680—Unbridging Bins

The Sonic Flo is the trade name for a device for unbridging bins. The product, made by the J C L Engineering Co., is used with steel, concrete or wooden bins. The device has been "engineered and designed to specifically vibrate each individual particle of material (with sonic waves) causing it to break loose," according to company spokesmen. With bin attachments on a variety of bins, the device may be moved from one bin to another. When used with



attachments it operates automatically. When installed permanently on one bin, no bin attachment is necessary. The device is operated by air. Secure complete details by checking No. 5680 on the coupon and mailing it to this publication.

No. 6560—Applicator

The Gustafson Manufacturing Co., Inc., has been working with one of the major fungicide manufacturers and has developed an applicator, called by the trade name, Chem-Soil mixer, which is used with the Gustafson



model Fo-Ro revolving drum duster for treating seedling diseases. The applicator is planter-mounted and during the planting operation treats the seed, the bottom of the seed bed and the soil that covers the seed. According to the company, the treated "safety zone destroys or retards the destructive fungi which are very active

during cool, damp weather." Two models of the mixer are available. The FMO mixer mounts on lister planters without seed imbedding wheels and the FMK mixer mounts on planters which use seed imbedding wheels. The Fo-Ro duster is tool mounted on the planter and is powered by a PTO assembly from the tractor. The mixer with the Fo-Ro duster will mount on most makes and models of planters. Check No. 6560 on the coupon to secure complete details.

No. 6559—Pesticide Dealer Program

Complete information about the pesticide dealer program is contained in literature prepared by the California Spray-Chemical Corp. as part



of its 50th anniversary observance. The program is centered in the firm's point-of-sale aids, national advertising, movies and other educational aids designed to sell the Ortho garden and home line. Full details may be secured by checking No. 6559 on the coupon and mailing it to Croplife.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 5657—Seed Germinator

The addition of the new Minnesota style germinator has been announced by the Seedburo Equipment Co. The germinator is a water cooled unit designed for organizations which need to maintain uniform temperature and accuracy, the company announcement states. The water is circulated through copper tubing built within the walls of the germinator, thus preventing leakage. Further information and prices on the firm's line of germinators may be obtained by checking No. 5657 on the coupon and mailing it to this publication.

No. 5673—Automatic Packaging

The St. Regis Paper Co. announces that "fully automatic packaging has now been extended to the filling of open mouth multiwall bags with the development of its St. Regis VredOMatic packer which makes it possible to fill open mouth multiwalls and sew them closed with or without boundover tape automatically. The VredOMatic packer is used in combination with a St. Regis pre-weighing scale." The packer positions, opens, fills, closes and sews, with or without tape, open mouth multiwall bags holding 25 to 125 lb. of granular, free-flowing materials such as feeds, sugar, ammonium nitrate, polyethylene pellets and similar products. It can also handle semi-free-flowing materials with auxiliary equipment, de-

(Continued on page 14)

Send me information on the items marked:

- | | |
|--|---|
| <input type="checkbox"/> No. 5657—Germinator | <input type="checkbox"/> No. 6550—Chemicals Booklet |
| <input type="checkbox"/> No. 5660—Display Fixtures | <input type="checkbox"/> No. 6551—Fungicidal Paint |
| <input type="checkbox"/> No. 5661—Vibrating Feeder | <input type="checkbox"/> No. 6554—Lawn Kit |
| <input type="checkbox"/> No. 5673—Automatic Packer | <input type="checkbox"/> No. 6556—Gibberellic Acid |
| <input type="checkbox"/> No. 5675—Vibrator | <input type="checkbox"/> No. 6557—Heptachlor |
| <input type="checkbox"/> No. 5680—Unbridging Bins | <input type="checkbox"/> No. 6559—Pesticide Sales |
| <input type="checkbox"/> No. 6549—Fungicide | <input type="checkbox"/> No. 6560—Applicator |

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You can be a dealer

New facilities in our Geneva, Utah plant make USS Anhydrous Ammonia, USS Ammonium Nitrate and USS Ammonium Sulfate available for the Spring planting season. Farmers throughout the West are going to be reading, hearing and getting mail about these three profit-boosting nitrogen products within the next few weeks. Make sure you'll be ready to fill their demand. Find out how you can become a USS NITROGEN FERTILIZER Dealer. Mail the attached coupon, TODAY!

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Agricultural Extension, United States Steel
919 Kearns Building, Salt Lake City, Utah

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NAME

COMPANY

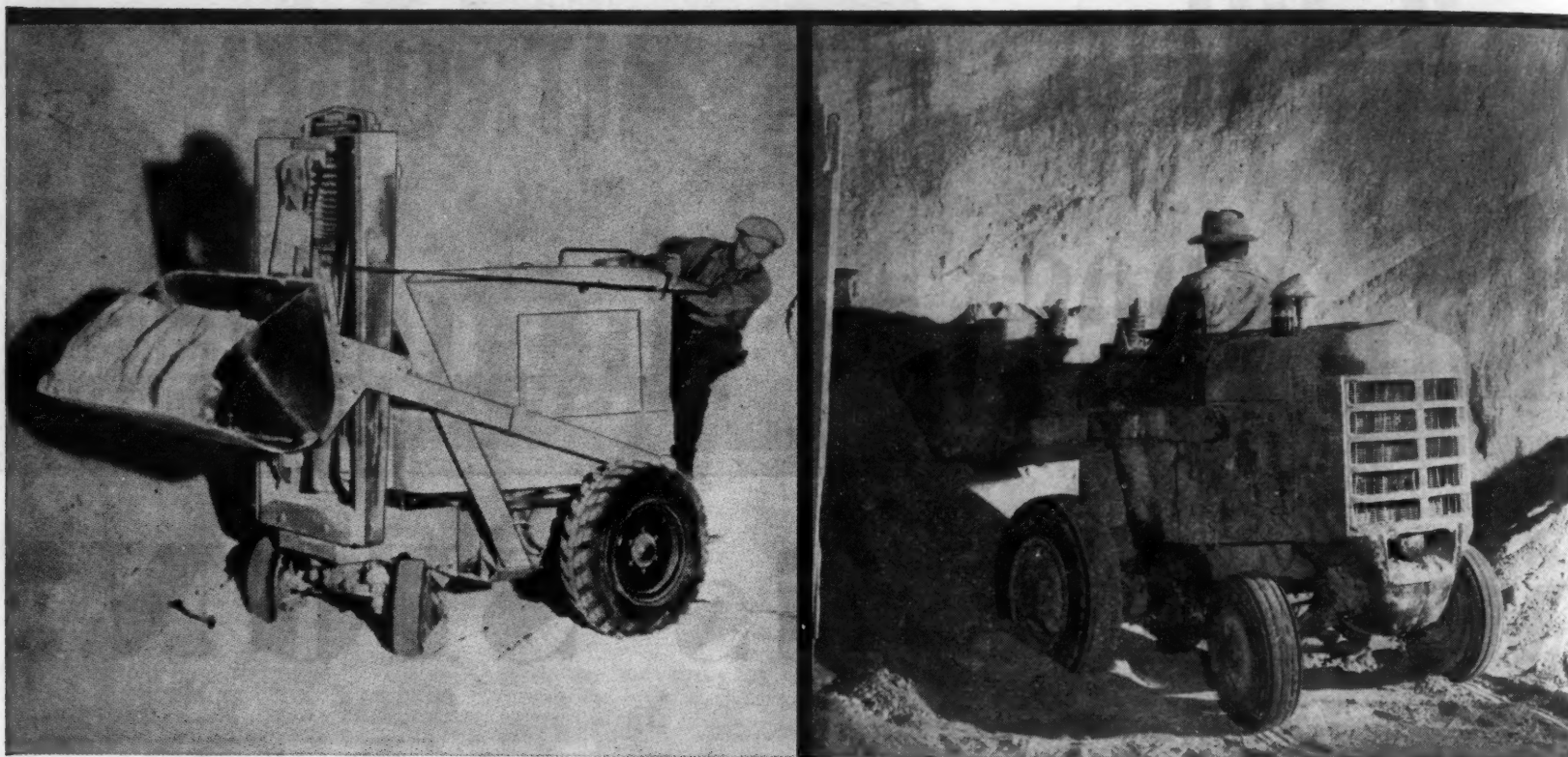
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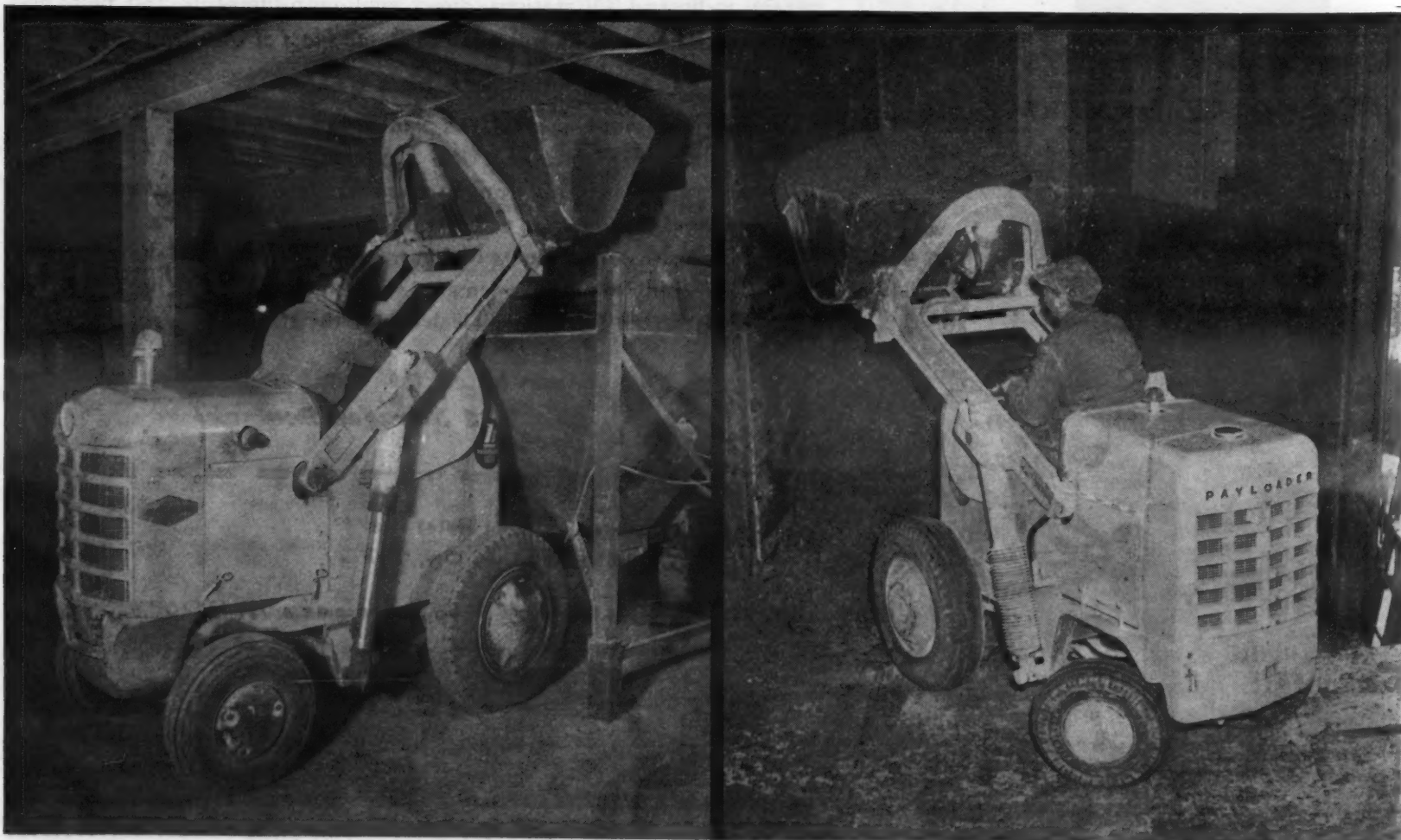
USS Nitrogen Fertilizers

UNITED STATES STEEL

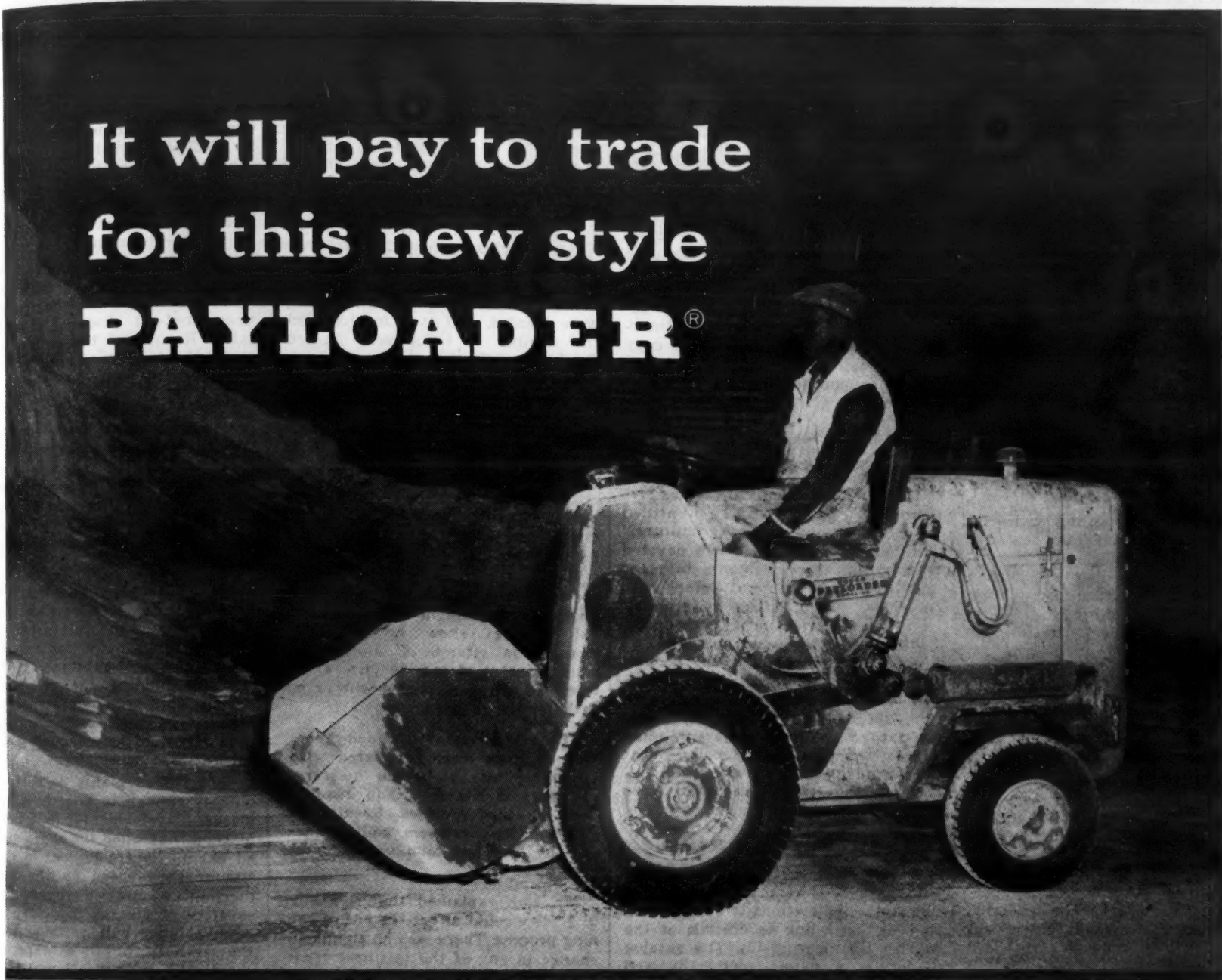
If you are still using any
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...built between 1940 and 1956



It will pay to trade for this new style **PAYLOADER®**



...handle up to 100% more

Long-time users of "PAYLOADER" tractor-shovels report that the new style model HA "PAYLOADER" does up to 100% more work than the last previous model and outperforms all other comparable sizes of tractor-shovels including some bigger, heavier machines.

Many advanced design features contribute to the outstanding superiority of the new-HA — the distinctive bucket motion with 40° tip-back break-out action at ground level — the hydraulic load-shock absorber that permits higher travel speeds and reduces spillage — the exclusive one-lever bucket control that simplifies and speeds operating cycles. These are only a few of the reasons why the new style model HA makes your operators more productive — why they can dig more, carry more and deliver more tonnage at lower cost.

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- Shortest turning radius
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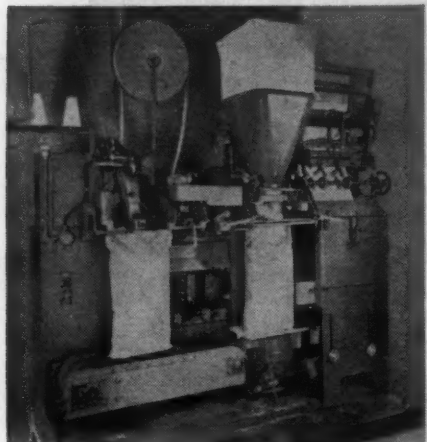
- ☐ Front-wheel-drive models HA (18 cu. ft.) and HAH (1 cu. yd.)
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Title _____
Company _____
Street _____
City _____ State _____
54

WHAT'S NEW DEPARTMENT

(Continued from page 10)

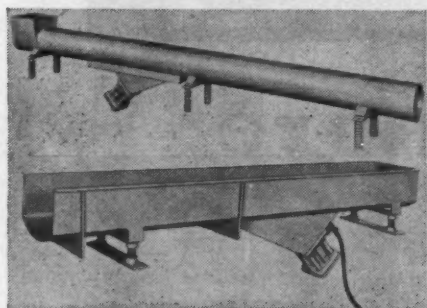
pending upon the characteristics of the materials. The company claims that "open mouth bags can be filled and closed automatically. The system provides accurate weights at a speed which matches or exceeds the production of most scales used in conjunction with open mouth packers. Bag closures are tight and accurate since



the system provides for proper control of the gussets and the bag top at all times during filling and sewing." It is said that one man can handle three or more machines. From 6-12 bags per minute per packer can be handled, it is claimed. Secure complete details by checking No. 5673 on the coupon and mailing it to this publication.

No. 5661—Vibrating Feeder

The Cleveland Vibrator Co. has introduced a new vibrating feeder in which the vibrating force is generated by a pneumatic drive mechanism. The feeder is completely metallic, and is claimed to resist high temperature damage and corrosion. Literature shows one moving part in the drive mechanism; no cams, bearings, belts or gears. The enclosed construction is designed to seal out



dirt and keep the drive free from destructive foreign matter. A wide variety of bulk material can be handled, the company states, and uphill feeding of some materials at 20° is possible. Rates of feed are adjustable. The feeders are available in pan, trough or tubular construction, with a selection of lengths and rates of feed. Check No. 5661 on the coupon and mail it to secure full information.

No. 6556—Gibberellic Acid Formulation

Brellin is the trade name for a new water-soluble powder formulation containing the plant growth stimulant gibberellic acid introduced by S. B. Penick & Co. The Penick announcement states: "Since gibberellic acid is applied at low concentrations, it was vital that a simple and practical method of preparing solutions be developed. When dissolved in one pint of water, one level teaspoon (2.5 grams) of Brellin will make a solution containing 10 parts per million of gibberellic acid. In general, the best response has resulted from this rate of application, but those desiring to experiment at other levels can do so simply by increasing or decreasing the amount of powder or water used. Preliminary studies indicate that gibberellic acid increases

the growth of dwarf azalea, chrysanthemum, juniper, maple, oak, Virginia pine, poinsettia, white spruce, African violet, and other plants and shrubs." Check No. 6556 on the coupon and mail it to secure complete details.

No. 5660—Display Fixtures

A four-page bulletin on store display fixtures, some of which are applicable to retail feed stores, has been issued by the Sitka Store Fixtures Co. The fixtures are designed to give maximum display and eye appeal to merchandise at strategic points where store traffic is at a maximum. The items also are designed for easy self-service. Interested dealers may obtain a free copy of the folder by checking No. 5660 on the coupon and mailing it to this publication.

No. 6550—Agricultural Chemicals Booklet

The Harshaw Chemical Co. has prepared a 20-page booklet entitled "Harshaw Chemicals for Agriculture." The contents include sections devoted to essential trace elements in plant nutrition, trace mineral compounds, fungicides, weed killers and miscellaneous agricultural compounds. Facts about the company and its facilities are included. In the booklet also are a list of agricultural chemicals manufactured by the company, other literature available from the company and supplementary reading suggestions. The booklet will be sent without charge if you will check No. 6550 on the coupon and mail it to Croplife.

No. 5675—Vibrator

A new leatherette-bound 36-page catalog on "Peterson Vibrolators" for industrial applications is available on request, according to officials of the Martin Engineering Co. The catalog describes in detail, pictorially and editorially, the action of the all-directional, high-speed vibrator used for the movement of granular matter. Each of the models is shown in photograph with description of characteristics and applications. Specifications and performance data are listed. A variety of suggested mountings is illustrated. The catalog will be sent if you will check No. 5675 on the coupon, clip and mail it to this publication.

No. 6549—Liquid Fungicide

The Chemical Insecticide Corp. has developed a new sticking agent, U-101, which it is adding to the liquid fungicide it markets under the Chem-Bam name. The agent is said to make the fungicide adhere more strongly to vines and plants. The company's announcement states: "U-101 virtually gives crops an impregnable coating of fungicide that can't be washed off by rain or watering. This, of course, gives crops greater protection against early and late blight, anthracnose, downy mildew, cercospora, blue mold, gray mold, bunch rot, and leaf spot than was possible heretofore." The fungicide has been used with great effectiveness on sweet corn, celery, beans, escarole, lettuce, potatoes, cabbage, cucumbers, peppers and beets. For free literature check No. 6549 on the coupon and mail it to Croplife.

New Kansas Firm

TOPEKA, KAN. — Rozel Fertilizer Co., Inc., Rozel, has been granted a charter as dealers in liquid, gaseous and solid fertilizer. Howard Riederer has been named resident agent. Capitalization of \$1,200 was authorized.



FARM SERVICE DATA

Extension Station Reports

Polk County (Oregon) Agent John Hansen reports that sheep tick control has proved highly satisfactory in at least four county flocks with the application of 1% dieldrin dust. Mr. Hansen and Bob Goulding, Oregon State College entomology department staffer, applied the dieldrin material to the flocks on Oct. 15.

Recent check showed practically complete elimination of ticks, except in flock where additional sheep were brought in after the original sheep were treated, and even in this flock the number of ticks were limited. Trials in other countries indicate that September is probably the best time to apply the treatment but that it should not be applied to lambs being marketed in 60 to 80 days.

★

Tomato growers can apply fertilizers without danger to canning quality or taste, University of California experiments show.

Bor S. Luh, food technologist, told growers at their annual Tomato Day on the Davis Campus that his chemical analyses show no significant changes in vitamin C and soluble solids content of tomato juice at the levels of nitrogen, phosphorus or potash fertilizers used.

The Department of Food Technology tests were correlated with fertilizer test plots run by farm advisors in Alameda, San Joaquin and Ventura counties. Results indicated that growers could benefit by greater tonnage and not harm the fruit.

Mr. Luh explained that a change in acidity could affect the entire canning process. There was no significant change in any of the fertilizer treatments. Nitrogen content in the juice, he said, would affect the amino acids and proteins, and possibly the taste. The food technology department's food acceptance laboratory is continuing the study of effects of fertilizer on juice flavor, he said.

★

Bindweed is growing earlier this year because of the mild weather. An early spring spray of fencerows and ditchbanks with 2,4-D amine will retard the bindweed and reduce cost of control this summer, says Gordon Hoff, extension agronomist at New Mexico A&M College.

Best results will be obtained by spraying as late as possible, the agronomist explains. But, he adds, farmers should spray before cotton, tomatoes, peppers, beans and other susceptible crops emerge from the soil.

The chemical should not be sprayed on weed patches in cultivated areas as it will seriously reduce germination of some crops and will completely prevent germination of others, Mr. Hoff said. Established crops such as alfalfa, grains and vegetables will also be damaged if 2,4-D amine is applied at the same rate as used for non-cultivated areas, he said.

★

Bean root-rot investigations conducted by the University of Idaho agricultural experiment station will be intensified at the Twin Falls branch station during the coming summer, announces Dr. A. M. Finley, head of the department of plant pathology. Bean root-rot is the major unsolved disease problem in the commercial bean-producing areas of southern Idaho.

Appointment of Don M. Huber of

Meridian, a University of Idaho agriculture graduate, as research assistant in the department to carry on this work was announced by Dr. Finley. Mr. Huber will be transferred to the bean disease laboratory in Twin Falls at the end of the current university year. During the summer he will work exclusively on the bean root-rot problem in that area.

"In 1956, very thorough and exhaustive laboratory, greenhouse and field studies were conducted on the bean root-rot disease," Dr. Finley said. "Results of those studies have paved the way for an entirely new approach to its control."

"Recent research indicates that certain chemicals act internally upon the bean plant in such a way that the plant may resist infection. These chemicals, when applied to the leaves of the plants, are absorbed and are translocated through the water conducting tissues to the roots."

"In laboratory studies conducted at Moscow it has been learned that bean plants respond to the invasion of root-rotting fungi by depositing a dark brown chemical substance in the tissue surrounding the points of invasion. This brown substance acts as a barrier to the invading fungi and if it is deposited soon enough it will retard disease development."

"Most bean plants do not respond quickly enough to effectively prevent disease development but it has been learned that when the above-mentioned chemicals are present in the root tissues they speed up the response mechanism and thereby reduce the severity of disease."

Mr. Huber will continue to study the activity of these experimental chemicals and will attempt to determine the practicability of their use in root-rot control.

In addition to the experiments with chemical control, field tests will be conducted this year, for the first time in the Twin Falls area, to determine the feasibility of developing varieties which will be naturally resistant to root-rot.

★

Nematocides—the increasingly popular soil fumigants for killing nematodes—can increase yields and quality of tobacco and vegetable crops by 25% or more, according to scientists of the U.S. Department of Agriculture. Nematocide treatments are expensive, and the USDA recommends that farmers try them on a small scale first, before making any substantial investment. This was cited by specialists of the Agricultural Extension Service, West Virginia University.

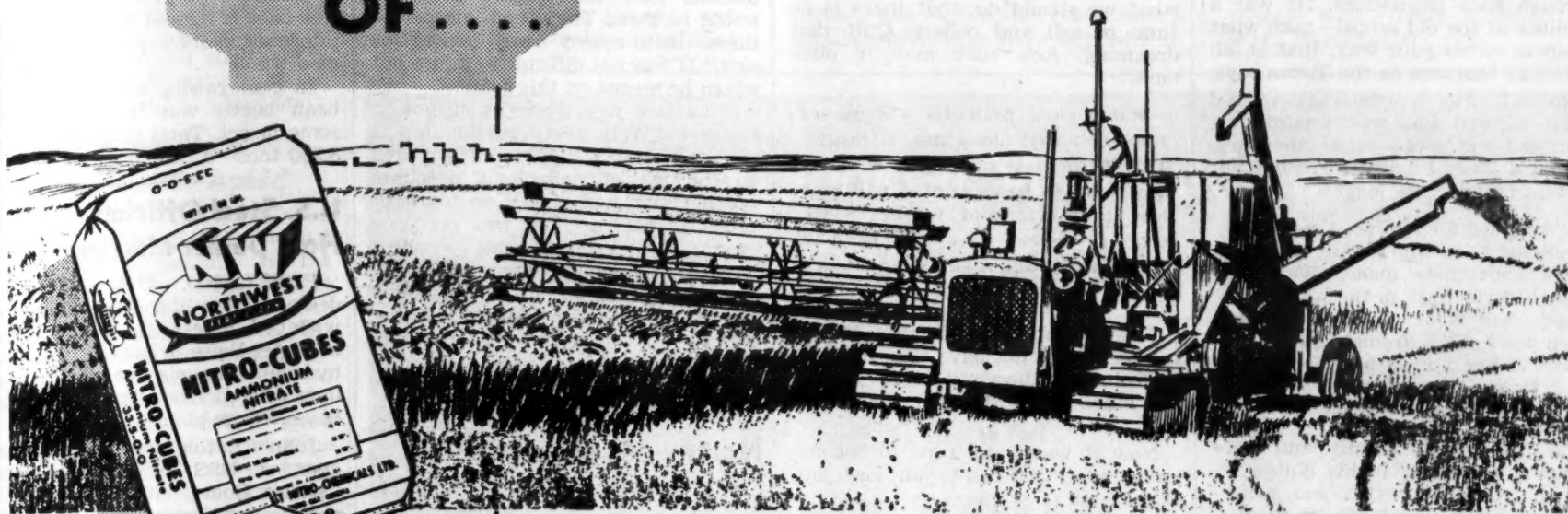
So far there is no soil-sample test that will reveal whether enough nematodes are present to make treatments with a nematocide worth while. But since these tiny microscopic worms cause millions of dollars worth of crop damage every year, there is no doubt that many farmers would profit by applying nematode-killing chemicals.

A. L. Taylor, nematologist at USDA's Agricultural Research Center, Beltsville, Md., recommends that nematocides be tested in fields that will be planted to high-quality crops. Applications can be made in the fall or before spring planting, if this fits in with other farm operations. In any case, the chemicals should be applied at least two weeks before planting so the soil will be free of fumes by planting time.

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Feed the soil that feeds your crop!

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Improve soil productivity the *modern* way—with new Northwest Fertilizers! These free-flowing Northwest plant foods make vital nutrients *readily available*... to give crops a strong, fast start and *earlier maturity*. And that's important—because even a week's earlier start on harvesting can give you a head start on frost, adding dollars to the value of your crop. Low-moisture Northwest Fertilizers do not lump or cake. Soil gets even distribution of phosphates and other nutrients. Reap the many benefits of rapid early growth and strong continued growth. Fertilize the Northwest way... the *modern* way for improved crop quality and yield.

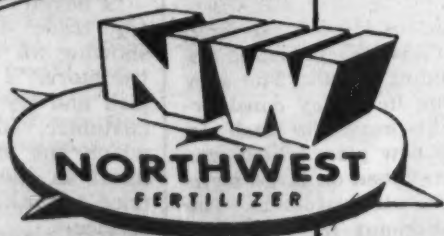
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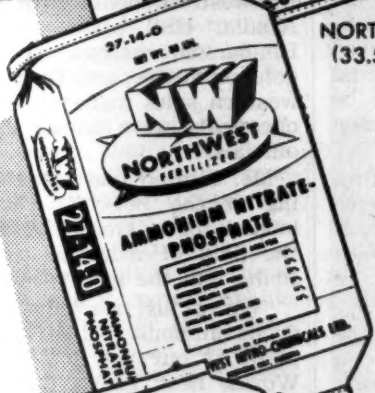
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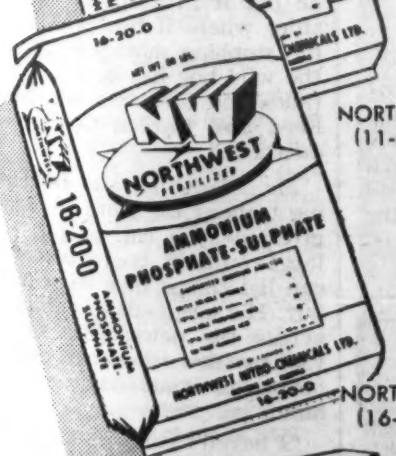
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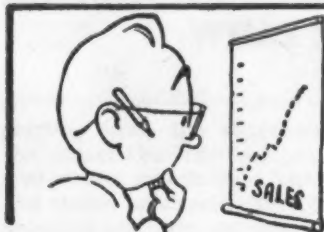
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Doing Business With

Oscar & Pat



Oscar Schoenfeld was getting very fidgety. Since his desk was back to back with the desk of his tall, blue eyed Irish partner, Pat McGillicuddy, Oscar could not help see Pat hunched over his desk working on what looked like an ad or a direct mail folder.

And Pat had been at this most of the morning, writing something, scratching it out, then starting afresh. To work on advertising copy was a waste of time to Oscar. He did not believe in stimulating business through such promotions. He was a member of the old school—take what business comes your way, that is, ah say, cash business, as the Texan says.

Rotund, frugal, one-track mind Oscar figured Pat was wasting his time and what was worse, the partnership's time. Finally, he could not contain himself any longer.

"Ach, we do not need more advertising," he blurted forth. "We need collections made. We need somebody to walk in the warehouse every half hour to see that the men don't stand around and gossip, nicht wahr? I have been out there five times this morning and you haven't been out there once."

Pat looked up quizzically, and there was a flash of fire in his blue eyes. "So that is what's eatin' you, begorra. Calm down, Oscar. You're as edgy as a farmer angling for an extra discount on fertilizer. The men don't like somebody keepin' tab on them so much. And me—I'm doing something important."

"Himmel, is spending money important? I make money seeing we take the discounts, and you throw it out the front door."

Pat straightened a little angrily. "Is that so? If you would let Tillie Mason do more of the book work, and if you would join me out selling somewhere, this company would have two salesmen, not one. No—on second thought, I wouldn't want you to sell. There would be too many complaints."

"Huh, you bet there would be complaints," Oscar growled. "I would tell those farmers a thing or two—those that owe us money."

"No thanks," Pat replied quickly. "Don't think about going out and selling. Stay right where you are—at that desk. I am sorry I mentioned it."

"I earn my salary," Oscar said in a dignified, proud voice. Then his eyes narrowed, but he said nothing more.

"And I suppose I don't earn mine, is that it?" Pat asked coldly.

Oscar said nothing. The office was the temperature of a sharp freeze room in a locker plant.

"You might as well know," Pat said slowly, "that as long as you are hooked with me as a partner, and as long as I am hooked with you, that I am going right on with sales promotion."

"And I," said Oscar through tight lips, "am going right on cutting costs. Somebody in this business has to have some sense."

Pat ignored the slam. "Oscar, the big danger every business man has to watch out for nowadays is not to get too standpattish. Not to get too satisfied with how he does business. The idea of 'this is the way we always did it, and it's good enough for the future' is out."

"Since when is collecting overdue bills out of date?"

Pat winced. That was his responsibility. "I will get at that—tomorrow. Right now I have worked out a

little idea on how we can trace the sales we lost."

"The sales we lost? Ach, why spend money on them?"

"We want to know why we lost certain sales, so that we can see how the mistake was made and so we can avoid it next time."

Oscar snorted. "McGillicuddy, sometimes I think you are just plain foolish. I am sick of all these efficiency ideas so many men who think they are smart say we should use. They use so much time figuring out what we should do, that there is no time to sell and collect. Quit that dreaming. Ach, such monkey business."

Pat sighed patiently. "Some of the efficiency ideas are all right. This little 'lost sale' pad which I am going to have printed will cost less than \$15 and whenever we want to we can have everybody in the firm fill out a slip everytime a sale is lost, even you and me."

"Me!" Oscar was indignant. "I will not do it. I do not have time for such foolishness, filling out slips. I have too much other important work to do."

Now it was Pat's turn to become indignant. "Oh, don't you lose any sales?"

"Of course not!" Oscar said sharply. "Those sales that are good, I take—for cash, or 30 days from good accounts. People who can't pay, I don't sell, so we don't lose."

Pat smiled thinly. "Well, others have their own opinions of how many sales you lose. This lost sales slip will call for some interesting information. Did we lose a sale because we didn't have an item in stock, or if the price was too high, or the customer thought he'd better look somewhere else first, etc.? Then we can look over those slips at the end of the week and see what we did wrong."

"I know what we are doing wrong without looking at slips," Oscar snapped. "I have tried to tell you many times, but, ach, you never listen. You stick your head in the sand. Himmel, you are stubborn."

"I am stubborn!" Pat looked at his partner. "How about you? You fight every progressive move we make. You were against our adding an anhydrous ammonia line. You were against our going into selling and spreading bulk fertilizer. You don't believe in buying and stocking new products. Don't make me laugh."

Oscar's nose twitched in rage. "I don't care about new products. I don't care about pleasing salesmen by buying lots of their goods. I am in this business to make money, to protect my investment, ach, and that's all I'm here for. Let the other fellow take

care of himself. That's his business, not mine."

"Sometimes we can make a lot of money by taking care of the other fellow's business," Pat said. "The customers' needs are our business. Customers expect us to advertise, to promote, to tell them about new products."

"Nein!" exclaimed Oscar quickly. "McGillicuddy if everybody would just stick to his own business, earn his own living, pay his own bills when they are due, and save some money besides, half the world's problems would be gone. The way some people throw their money away makes me sick." It was not difficult to figure out whom he meant on this score.

Pat's face was white as he got to his feet. "Well, every partnership is give and take, I suppose." He picked up the list of delinquent accounts which Oscar had placed on his desk two days before. "You will get your way on this—I'm going out to collect them. And I get my way on this—" he held up the copy on the "lost sale" pad. The door slammed so loud behind Pat that it shook the door frame.

Plans Set for Pacific Northwest Meeting

PORTLAND, ORE.—Ben McCollum, J. R. Simplot Co., Pocatello, Idaho, president of the Pacific Northwest Plant Food Assn., has announced tentative plans for the eighth annual regional fertilizer conference to be held June 26-28 in Portland's Benson Hotel.

Opening day program will feature speakers while the afternoon will be devoted to a bus trip to experiment stations at Oregon City and Vancouver, Wash. Luncheon will be served in Oregon City.

The second day program will be again split between speakers and a trip to the association's Hillsboro, Ore., farm demonstration project. The annual conference banquet is slated for Thursday evening, June 27 at the Benson Hotel.

A technical and scientific conference will be held the morning of June 28 with adjournment slated for noon. Arrangements are under direction of Grant Braun, American Potash Institute, Portland, chairman of the soil improvement committee. Tom Jackson, Oregon State College, will serve as program chairman.

PROPER RATE

DAVIS, CAL.—Addition of fertilizer to equal 100 lb. nitrogen per acre per year is the proper rate on peach-growing soils for best growth, set, fruit size and yield, E. L. Proebsting, University of California pomologist, said at the recent Peach Day here.

RINGING THE CASH REGISTER

1% Discount Helps

When slow-paying customers became a burden for John Kratz, operator of the West Bend (Wis.) Elevator, he devised his present system of extending credit. The new policy, Mr. Kratz states, is bringing in money considerably faster and gives farmers who have the cash an opportunity to make a saving. The new plan, which was initiated during the past year, is explained on large signs on the wall of his office, visible to all customers. The signs state that there is a 1% discount for cash and that 6% interest is charged on all accounts after 60 days. "I believe that farm dealers as a whole have been behind other merchants in asking for their money," states Mr. Kratz, "and we have at last gotten around to a firmer policy in this firm and I think we can stick to it."

Heavy Losses from 1956 Insect Outbreaks Tallied for Colorado

FORT COLLINS, COL.—Insect activity in Colorado last year caused crop losses ranging from 12.5% of popcorn and 11% on alfalfa hay to minimum of .1% on green peas. The estimated losses have been announced by Dr. L. B. Daniels, chairman of the Colorado Insect Detection committee and chief entomologist for the Colorado Agricultural Experiment Station.

The pea aphid was responsible for the heaviest damage to alfalfa in areas growing that crop. But the alfalfa weevil and the spotted alfalfa aphid were also problems in some areas.

Total hay loss for 1956 is estimated at 160,592 tons, Dr. Daniels said. Loss of alfalfa seed in northeastern counties only is figured at 13,350 lb., with information incomplete for the state as a whole.

In bean-raising areas, the Mexican bean beetle was the most troublesome insect. Total estimated loss was 8,300 tons—a full 10%.

U.S. Steel Officials Hold Dealer Meeting

PORTLAND, ORE.—Fertilizer dealers from the Boise Valley met with U.S. Steel Corp. officials recently in Hotel Boise to hear about new anhydrous ammonia and nitrogen products offered from the new USS, Geneva Works plant at Provo, Utah.

John Clinton, assistant sales manager of USS coal chemical sales, Charles Bourg, chief agronomist for the western operations of USS; A. K. Kindla, USS coal chemicals; Max Henderson, chairman of USS nitrogen committee; and Frank E. Adams, western sales manager for USS coal chemicals were among the visiting officials.

Mr. Clinton told a luncheon meeting of the Boise Ad club that he looked for a tremendous growth in the field of industrial chemicals in Idaho and the intermountain west.

"We've just started a new anhydrous ammonia and nitrogen products plant at our big steel mill, Geneva Works, near Provo, the first of its kind in a major steel mill in the U.S.," Mr. Clinton said. "We certainly could never develop a plant of this magnitude and expense if we didn't feel a tremendous future existed for our products."

CITY TRADE

(Continued from page 9)

he put it in a special pen near the store where it has proved a magnet for stopping motorists. The story of the wild hog has been told dozens of times and each time Mr. Slaughter's Feed and Garden Center has been mentioned.

Mr. Slaughter also conducts feeding tests at the store and quite often gives away a calf or pig. He has a large bulletin board where farmers can list things they want to trade or buy. His large ads are often splashed across the newspapers showing the various new products and inviting people to come out and visit with him.

"I haven't got away from the country trade altogether," he said, in showing all the new departments of the store. "I just decided to be hog-ish and try to get everybody for a customer. In our new store here which the salesmen tell me is the finest in the entire Southwest, I've tried to make it a complete one-stop service."

"When customers come in looking for something, I intend for them to find it. That means stocking nearly everything they will need and then treating them so nice that they'll come back next time."

INSECT AND PLANT DISEASE NOTES

Indiana Reports Little Insect Activity

VINCENNES, IND.—On March 25 trees in each of two orchards were bugged for an indication of insect activity. Eleven tarnish-plant bugs were recovered at one of the above locations. No stink bugs or plum curculio were found at either location. The first egg mass of the red-banded leaf roller for the season was found March 25 on Rome. Clover aphids are quite active in a neglected orchard in the Vincennes area at the present time. European red mite eggs, however, have not hatched. No codling moth pupation has been observed, to date. A relatively heavy infestation of alfalfa rollers was noted last season. Aphids are readily found but there is no indication of adult activity at the present time.—Merrill L. Cleveland.

Prospect for Low Numbers of Spotted Alfalfa Aphid

COLUMBIA, MO.—It now looks as though the spotted alfalfa aphid did not overwinter successfully in the northern half of the state, and it seems very improbable it overwintered in sufficient numbers in north Missouri to cause severe damage to seedling alfalfa this spring. Although we will not know definitely the situation in north Missouri for another week or so, there is a possibility that some spotted aphids will be present early in the season. Kansas is reporting some infestations in northern Kansas counties, and it now begins to look as though winter survival may be affected as much by moisture as by temperature. With spotted aphid numbers much lower this spring than was anticipated, we believe there is a good possibility that seedlings this spring can be established. Certainly the possibility of getting a stand this spring is much better than it would have been last fall, and if spotted aphids show up again during the latter part of the summer as they did last year, the prospects are better now than they would be this fall. Pea aphids could be a serious problem again this spring, particularly in the northern half of the state. Both new seedlings and old stands may need to be sprayed for these insects, but pea aphids are usually not as rough as the spotted aphid on new seedlings. Pea aphids will be especially troublesome if we should have a slow, cool spring.—Stirling Kyd and G. W. Thomas.

Heavy Survival of Boll Weevils Seen in Georgia

ATHENS, GA.—Spring examinations of surface trash from woods adjacent to old cotton fields, to determine the number of boll weevils surviving the winter, were made in four regions in Georgia from March 11 to March 21, 1957. The average for the State was 1,036 live weevils per acre of surface trash. This compares with 390 weevils one year ago.

Based on the number of weevils found during the fall and comparing with the spring count, the winter survival for the State was 54%. Twenty-nine of the 50 fields examined or 58%, were infested. Five samples of two square yards each were taken from each of the fields. The maximum number of weevils per acre from one field was 13,068.

The averages for the different areas where samples were collected were as follows: Northwest (Gordon County) 2,016; North central (Spalding, Butts, Pike, Henry and Lamar Counties) 1,718; East central (Burke County) 290; and South (Tift County) 436. This is the largest average number of weevils surviving the winter since

the spring of 1953. Heavy weevil infestations during the last two years came in spite of relatively low survival. This emphasizes the importance of weather conditions during June and July in determining the severity of weevil infestations.—C. R. Jordan.

Insect Situation for New Mexico Described

STATE COLLEGE, N.M.—Spotted alfalfa aphids were building up in Lea, Eddy, Quay, Socorro, Otero, and San Miguel counties at the end of March. Infestations in Dona Ana County were light and spotty.

Thrips (*Frankliniella* spp. and *Thrips tabaci*) are abundant in alfalfa in Dona Ana County, and clover mites (*Bryobia praetiosa*)

are infesting homes in many areas throughout the state.

Clover mite eggs are abundant on fruit trees in Rio Arriba, San Juan, Sandoval, Bernalillo, Valencia, and Lincoln counties, and McDaniel mites (*Tetranychus mcdanieli*) are numerous at the bases of apple trees in Sandoval, San Juan, and Bernalillo counties.

An aphid (unidentified) is building up heavy populations in bermuda grass lawns in Las Cruces, but rose aphids (*Macrosiphum rosae*) are light to heavy on roses throughout the state.—John J. Durkin.

Maryland Expects Many Corn Borers This Year

COLLEGE PARK, MD.—It will soon be time for alfalfa weevil, pea aphid and meadow spittlebug to become active in the field. In Montgomery and Prince Georges Counties alfalfa weevil eggs were beginning to

hatch March 29. On the lower Eastern Shore pea aphids are present in light numbers.

As stated in our notes of last week, the 1956 fall population survey showed 80 European corn borers per 100 stalks for the state average. Based on this figure the U.S. Department of Agriculture has estimated that in 1956 loss of grain corn alone in Maryland amounted to 751,000 bushels, worth approximately \$1,021,000.

Cutworm moths are beginning to appear in the black light trap at the Agronomy Research Farm, Fairland. Cutworms are destructive to many crops particularly in the spring. The best time to control them is before planting.

Richworms or larvae of the green June beetle have come to the surface and will be uprooting plants in tobacco beds.—Theo. L. Bissell and W. C. Harding, Jr.

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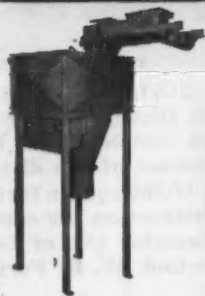
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W. Jay Slifer

ELECTED — The National Burlap Bag Dealers Assn. has elected W. Jay Slifer, Denver, as its new president. Mr. Slifer is vice president and general manager of the Arrow Bag Company of Colorado and has been a member of the association's executive board and chairman of the promotion committee for the burlap bag industry. He is also delegate to the Burlap Council of the Indian Jute Mills Assn., Calcutta. He has been with Arrow at Oklahoma City and opened operations for the company at Denver in 1948. He was a co-founder and first president of the Colorado Poultry Products Assn. and is a past president of the Denver Feed & Grain Club.

Reader Views

"Recently our department head, Dr. T. H. Rogers, started circulating Croplife to the staff. I want to congratulate you on the journal, or newspaper, as you refer to it. It contains excellent information of the type that often in the past we have had to wait several years to find out about. Keep up the good work."—Joel Giddens, associate professor, department of agronomy, University of Georgia, Athens, Ga.

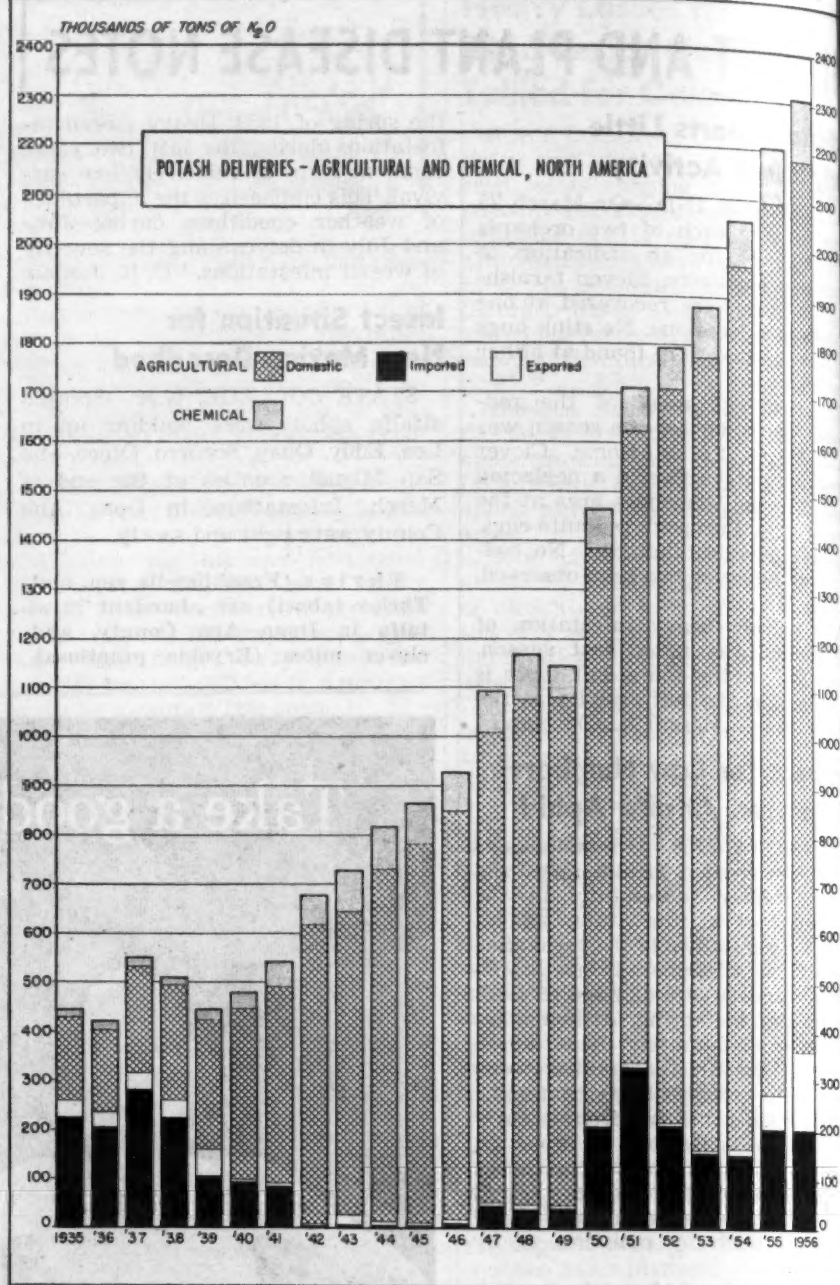
Gibberellic Promising As Weed Control Aid

FARGO, N.D.—Gibberellic acid, the new plant growth regulator, shows promise in breaking the dormancy of wild oat seeds, Dr. E. A. Helgeson, North Dakota Agricultural College botanist, reports.

Further testing in this area will be done, he said. If the substance merits field application, it may become an effective aid in the control of wild oats. The seed may be stimulated to germinate in the fall or early spring when control by cultivation is effective, Dr. Helgeson said.

MISSOURI APPOINTMENT

COLUMBIA, MO. — George H. Wagner, Columbia, has been named assistant professor of soils at the University of Missouri, according to John H. Longwell, College of Agriculture dean. He will be working on microbiology and trace element research projects.



POTASH DELIVERIES—The above graph shows potash deliveries in North America for calendar years dating back to 1935. It was issued by the American Potash Institute along with the summary of 1956 deliveries. According to the Institute, deliveries of potash in North America by the seven leading American potash producers and the importers during 1956 amounted to 3,932,527 tons of salts, containing an equivalent of 2,307,961 tons K₂O. This was a 4.7% increase over 1955 deliveries. Deliveries for agricultural purposes in the continental U.S. for 1956 amounted to 1,872,704 tons K₂O, a decrease of 5,885 tons under 1955. See page 1 of the April 1 Croplife for the report.

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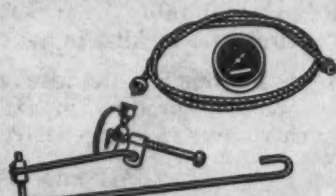
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NEW BEST PLANT—Above is an aerial view of the enlarged plant of Best Fertilizers Co. at Lathrop, Cal. The picture shows the new sulfuric acid plant, the railroad siding, the truck parking area and the main plant. Headquarters of the company are in Oakland.



DAVISON OFFICE BUILDING—The new office building at Bartow, Fla., of the Florida Phosphate Division, Davison Chemical Company Division of W. R. Grace & Co., has been completed and now houses the 65 administrative, office and engineering personnel of the division. It is approximately 170 feet long by 70 feet wide, with 10,500 square feet of floor space. It is one story in height, of masonry block construction, air conditioned and centrally heated. Wellman Construction & Engineering Co., of Lakeland, Fla., drew the plans and were in charge of construction. W. R. Fort is manager of the Florida Phosphate Division.

MEETING MEMOS

April 14—Tour of Pacific Northwest Plant Food Assn. Farm Demonstration Project at Hillsboro, Ore.
 April 19-21—Florida Seedsmen's Assn., Money Plaza Hotel, Miami Beach, Fla.
 June 6-8—Manufacturing Chemists Assn., Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.
 July 4-5—Alabama Seedsmen's Assn., Battle House, Mobile, Ala.
 Oct. 1-3—Southern Seedsmen's Assn., Jung Hotel, New Orleans.

1958

March 4-5—Western Cotton Production Conference, Hotel Cortez, El Paso, Texas, Conference Sponsored by the National Cotton Council and the Five State Cotton Growers Assn.

EDITOR'S NOTE—The listings above are appearing in this column for the first time this week.

April 14-15—Fifth Annual California Fertilizer Conference, Fresno State College, Fresno, Cal. Sponsored by California Fertilizer Assn., Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

April 29-May 1—Pacific Northwest Pest Control Operators Assn., New Heathman Hotel, Portland, Ore.

May 3-4—School for Chemical Analysts in Industry and State Laboratories, Purdue University, Lafayette, Ind. Sponsored by National Plant Food Institute.

May 13-15—Carolinas-Virginia Pesticide Formulators Assn., Third Annual Spring Convention, Cavalier Hotel, Virginia Beach, Va., W. R. Peele, Raleigh, N.C., Secretary-Treasurer.

May 20-21—National Cottonseed Products Assn., 61st Annual Convention, Shoreham Hotel, Washington, D.C.

May 20-22—Chemical Specialties Manufacturers Assn., Drake Hotel, Chicago.

June 9-12—National Plant Food Institute, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 23-26—American Society of Agricultural Engineers, Golden Anniversary meeting, Michigan State University, East Lansing, Mich.

June 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. R. R. Bertramson, Washington State College, Pullman, Wash., chairman.

July 10-14—Plant Food Producers of Eastern Canada, Manoir Richelleu, Murray Bay, Quebec.

July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvez Hotel, Galveston, Texas.

Sept. 5-6—Great Lakes States Anhydrous Ammonia Meeting, Michigan State University, East Lansing, Mich.

Sept. 8-15—International Congress of Crop Protection, Hamburg, Germany.

Oct. 2-4—Eleventh annual Beltwide Cotton Mechanization Conference, Shreveport, La.

Oct. 3-5—Pacific Northwest Plant

Food Assn., Annual Convention, Sun Valley, Idaho, Leon S. Jackson, Lewis Bldg., Portland 4, Ore., Secretary.

Oct. 14—Sixth Annual Sales Clinic of the Salesmen's Assn., American Chemical Society, Hotel Roosevelt, New York.

Oct. 17—Conference on Chemical Control Procedures for Industry Chemical Control Analysts, Shoreham Hotel, Washington, D.C. Sponsored by National Plant Food Institute.

Nov. 3-5—California Fertilizer Assn. 34th Annual Convention, St. Francis Hotel, San Francisco. Sidney H.

Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

Nov. 6-8—Fertilizer Industry Round Table, Sheraton Park Hotel, Washington, D.C.

Dec. 11-13—Agricultural Ammonia Institute, Seventh Annual Meeting, Hotel Marion, Little Rock, Ark., Jack F. Oriswell, Claridge Hotel, Memphis, Executive Vice President.

1958

Jan. 7-8—Texas Fertilizer Conference, Texas A&M, College Station, Texas.

Jan. 13-15, 1958—Weed Society of America and Southern Weed Conference, joint meeting, Peabody Hotel, Memphis, Tenn.

Jan. 21-23—California Weed Conference, San Jose, Cal.

FIRM INCORPORATED

NORFOLK, VA.—The Chatham Fertilizer Co. here has been incorporated.

Witco Gets Larger Chicago Quarters

CHICAGO — Midwestern regional sales headquarters of the Witco Chemical Co. have moved into new, larger offices in the same building, according to J. S. Harrison, midwestern sales vice president. Also moving into the new quarters was the sales department of the Emulsol Chemical Division, formerly located at 59 East Madison St.

Occupying 4500 square feet, the newly-decorated area covers a full floor in the Lincoln Tower Bldg. Witco's address and phone number remain the same, 75 East Wacker Drive and Financial 6-2960, respectively.

Expanding sales effort and consolidation of the various divisions made the move necessary after the former quarters on the 10th floor of the same building became too small, Mr. Harrison said.



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REG. U. S. PAT. OFF.

Wisconsin Approves \$414,250 Fund For Control of Jackpine Budworm

MADISON, WIS.—Approval for the use of \$414,250 in state funds, for control of the jackpine budworm in northern Wisconsin, was granted March 29 by an emergency committee called for the purpose of considering the question. The committee, comprising Gov. Vernon W. Thomson and the chairmen of the Senate Finance Committee and the Assembly Finance Committee, agreed that the need for spraying some 202,000 acres was urgent.

Lester P. Voigt, conservation director who outlined the project to the emergency board, told Croplife in a telephone interview April 4, that approval of necessary funds means that spraying operations can now be launched on short notice at times when optimum results may be obtained. Entomologists will keep a close watch on the area to determine the progress of the infestation.

In his request for emergency funds, Mr. Voigt told Gov. Thomson that if the entire amount of the grant had to be spent, the state would be reimbursed \$103,562 by the federal government, and private landowners in the area would be billed for \$155,342 under Wisconsin forest pest control law.

Mr. Voigt pointed out that preparations must be made to spray

the entire threatened area, because it would be too late if the project were delayed until entomologists could determine whether or not biological control factors might prove effective.

The infestations are in 195,200 acres extending from Polk County into Bayfield County, and 10,600 acres in Oneida County. The cost of treatment is estimated to be \$2 an acre.

Mr. Voigt said that the state's application for aid under the federal forest pest control act had been approved, so 25% of the cost would be paid by federal aid. The state and private owners split the rest.

"Failure to act on the problem would amount to the department's neglecting its obligations as they are set forth in the law," Mr. Voigt told Gov. Thomson.

"Potential losses which will result if the outbreak continues will have a far reaching effect on our timber resources for years to come. Industries within the state dependent on jack pine would be particularly hard hit, with resulting detrimental effects on the economy of the state as a whole."

The budworm buildup began in 1952, and on past experience was expected to collapse under attacks by parasites and predators. By the time it was realized that this outbreak was taking a new course, there were timber losses in Douglas County.

Last summer, the state sprayed 6,690 acres and industrial forest owners sprayed 15,000 acres. The results were described as excellent, with no harmful side effects from the insecticide.

FLORIDA TONNAGE

TALLAHASSEE, FLA.—February fertilizer consumption in Florida totaled 192,627 tons, according to the Florida Department of Agriculture. This included 133,858 tons of mixed goods and 58,769 tons of materials.



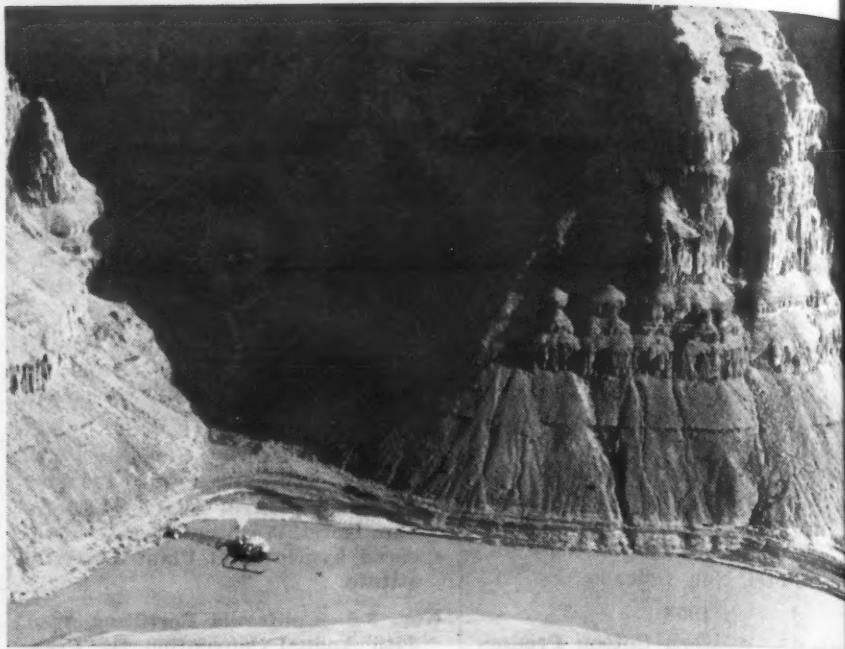
V. Keith Fuller Denzil M. Waller

CSC Appoints Two To Agricultural Chemicals Sales Staff

NEW YORK—Commercial Solvents Corp. has named V. Keith Fuller and Denzil M. Waller to its agricultural chemicals sales staff. C. T. Marshall, sales manager for the firm's agricultural chemicals department, has announced.

Mr. Fuller's sales responsibilities will be in Illinois and Indiana, with headquarters at the company's St. Louis office. A graduate of the University of Illinois, Mr. Fuller has had four years of sales experience in the fertilizer industry. He will continue his residence at Bloomington, Ill. During World War II Mr. Fuller served with the Navy in the Pacific.

Mr. Waller is assigned to the southern sales district with headquarters at the firm's Sterlington, La. office. He will reside at Monroe, La. Mr. Waller, a native of Mt. Enterprise, Texas, attended Rice Institute. He has had several years of sales experience in the fertilizer and feed industries.



GUANO TRAMWAY BEGUN—An aerial freight tramway to haul an estimated cache of 100,000 tons of bat guano from a remote cave in the depths of the Grand Canyon begins to take shape as a helicopter strings a 1/4-inch cable 11,500 feet across the canyon gorge. The tramway is being constructed by the Consolidated Western Steel Division of U.S. Steel for New Pacific Coal and Oils, Ltd., Toronto. The latter company plans to market the guano as a fertilizer concentrate and as a source for the ingredients of drugs. Entrance to cave can be seen in middle of picture to the right.

Initial Steps Taken for Removing 100,000 Tons Bat Guano From Grand Canyon Cave

GRAND CANYON, ARIZ.—Removal of some 100,000 tons of bat guano from a cave in Grand Canyon is planned by New Pacific Coal and Oils, Ltd., Toronto. Engineers of U.S. Steel's Consolidated Western Steel Div. are working with the Toronto firm in developing plans for an aerial tramway now being erected from the mouth of the cave to the canyon rim some 1 1/2 miles across the river gorge. The first extractions of guano are expected to be made in early summer. The material will be marketed mainly as fertilizer, but also as an ingredient for drug manufacturing.

The cave, entrance of which is situated about 600 feet up the precipitous canyon wall above the Colorado River, was discovered in the 1930's, but only recently was a method devised to remove the guano economically. Known deposits are estimated to be worth \$10 million, but unexplored regions of the cave may hold further deposits of unknown value, the cave's developers state.

Archeologists say that the cave is perhaps 60 million years old. It was acquired by New Pacific in March, 1955, and research has been carried on in Canada and the United Kingdom to determine to what extent the material might be used in the manufacture of drugs. The guano is reported by the company to contain from 10% to 15% nitrogen, plus some phosphate and potash content. They say the cave is the only guano deposit of its kind to be discovered in North America and will be the only one in operation when production begins this summer.

The problem of how to remove the guano from the cave was a serious one, but has apparently been overcome. Stanley Farwell, construction superintendent for Consolidated Western, described the tramway project as "turn-key" operation in that U.S. Steel is building the aerial carrier in its entirety—from drawing board to completion.

One of the most difficult phases of construction is over. This was the stringing by helicopter of 11,500 feet of 1/4-inch construction cable, the first of four cables which will be drawn across the 2911-foot deep gorge before the permanent 1 1/2-inch track cable is suspended from three towers which will support the tramway cable over its 9400-foot route from loading to discharge terminals.

The entire cable stringing operation

will take about a month, Mr. Farwell said. Cables and traction ropes were fabricated by the Columbia-Geneva and American Steel and Wire divisions of U.S. Steel.

Bat Cave had several owners before the New Pacific acquired it on lease from the Department of Interior. Previous attempts to remove guano by barge were unsuccessful because of the Colorado River's treacherous currents and sand bars. Recent owners tried flying guano out by helicopter and airplane, but these methods were reported to be too costly.

Since there is no road or trail to the bottom of the canyon in the vicinity of the Bat Cave, all equipment, personnel and supplies have been flown in since the tramway project was begun last August.

Claire C. Beatty, Consolidated Western engineer who designed the tramway, described the Grand Canyon operation as the most unusual and difficult he has worked on in his 38 years with U.S. Steel, during which he has helped design some 150 tramways all over the world.

"The inaccessibility of the site made it particularly arduous," he said. "This job was not only a challenge from a designing and construction standpoint, but also from a logistics angle. Since there is no way in or out of this section of the canyon by trail, everything from steel to toothpaste had to be flown in."

During the six months on the job so far, men on the floor of the canyon worked in temperatures ranging from 130 degrees in the summer to below freezing in the winter.

The guano will be picked up by a vacuum and carried about 1,000 feet through a 10-inch pipe to a bag house where air and guano are separated. The guano then drops into loading bins of the lower tramway terminal where it is diverted into the tramway bucket. The developers plan to limit withdrawal of the product to 10,000 tons a year, unless further exploration uncovers additional deposits.

Guano will be packaged in 5, 10 and 25 lb. containers at the top of the rim where a warehouse will be built. The product will be taken to the Kingman, Arizona, airport, about 60 miles from the site, for permanent warehousing, then by rail to Los Angeles for national distribution.

REMEMBER TO ORDER

CHASE BAGS

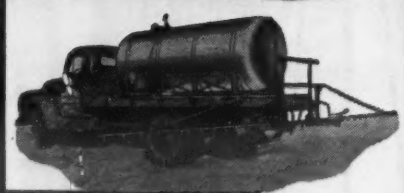
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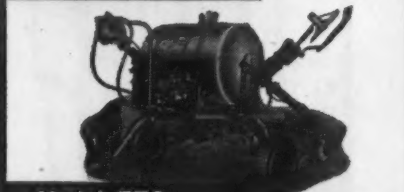
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NORTH CENTRAL ESA

(Continued from page 5)

greatly the activity along this has increased during the past years. The number of aircraft inspected in 1947, he said, was 60,113. In 1956, it was 97,351, for an increase of 62%. Other types of inspection for the years 1947 and 1956 were given as follows:

	1947	1956	% Increase
Inspected..	37,329	46,087	23%
Inspected Cars In- spected.....	73,115	103,538	41%
Inspected.....	6,703,961	17,262,188	156%
Inspected.....	121,400	244,566	101%
Inspected.....	5,846	45,524	679%

Dr. Davis reported that of the nearly quarter-million interceptions of unauthorized plant material, some 7,500 lots had plant insects. These included some pests considered particularly dangerous to agriculture, he said. Among them were 162 Mediterranean fruit flies; 139 citrus canker; 28 black spot of citrus; 16 melon flies; 29 Oriental fruit flies; 26 gold-nematodes; 110 West Indian fruit flies; 17 olive fruit flies; 164 pink bollworms; and 6 Durra stem borers.

Dr. Don Wilbur, Kansas State College, Manhattan, became chairman of the North Central Branch of ESA at the meeting. Chairman elect, to take office next year, is Roscoe Hill, University of Nebraska, Lincoln. Everett Bussart, Velsicol Chemical Corp., Chicago, was made a member of the national governing board, and Al Buzicky, University of Minnesota, St. Paul, was named member-at-large of the executive board.

The annual banquet was held Thursday night, March 28, with Oscar E. Tauber, Iowa State College, as toastmaster. The banquet was preceded by a social hour for all conventioners, sponsored by the following companies:

California Spray-Chemical Corp.; Chemagro Corp.; Diamond Black Leaf Co.; The Dow Chemical Co.; Geigy Agricultural Chemicals; General Chemical Division, Allied Chemical and Dye Corp.; Hercules Powder Co.; Monsanto Chemical Co.; Olin Mathieson Chemical Corp.; Pennsylvania Salt Manufacturing Company of Washington; Rohm and Haas Co.; Shell Chemical Corp.; Standard Oil Company of Indiana; Stauffer Chemical Corp.; Thompson-Hayward Chemical Co.; Velsicol Chemical Corp.; and Woodbury Chemical Co.

USDA BILL

(Continued from page 1)

Coast for nearly 30 years, now gives evidence of expanding at a rapidly dangerous rate. Its further spread in the cooler northern climates of the nation is to be expected unless some cooperative action is taken by USDA through local officials and producers, he said.

He told Congress that there are pest control chemicals which provide effective control.

Dr. Clarkson told Congress that witchweed had now been identified in four counties of North Carolina and four adjacent counties of South Carolina. He said federal quarantines were now under consideration.

Passage of the bill would give the pest control branch of USDA a green light to go ahead on a control campaign against the soybean cyst nematode. In such control projects it is expected that USDA would act cooperatively with local agencies and farmers. One of the basic factors in any quarantine action would be at the local farm level. In the case of the soybean cyst nematode or witchweed the farmer would halt production of host crops. USDA would compensate him for application of pest control items.

Central Farmers Lets Contract for Phosphate Plant

CHICAGO—Central Farmers Fertilizer Co. has announced that the Jacobsen Construction Co. of Salt Lake City has been awarded the general construction contract for the phosphate rock processing and cal-meta manufacturing plant at Georgetown, Idaho.

The \$7,500,000 contract is part of the company's \$14,500,000 development in Idaho. The Torkelson Engineering Co., also of Salt Lake City, is the designing engineer. (See page 33 of the March 4 issue of Croplife).

Joseph J. Lanter, president of Central Farmers, said that actual construction will begin in the immediate future. The complete project will include mining of phosphate ores on the company's property near Georgetown, Idaho. Mining will commence in the summer of 1957.

The company expects to start shipments of rock phosphate by late 1957 and have the cal-meta plant in operation by October, 1958. Approximately 300 people will be employed, and production of calcium metaphosphate is expected to reach 100,000 tons annually.

Central Farmers is an agricultural cooperative owned by 16 regional agricultural cooperative corporations distributing plant foods in the 15 midwestern states.

Label Registration Received for Toxaphene On Lettuce, Cabbage

WILMINGTON — Federal label registration for the use of toxaphene insecticides on lettuce and cabbage has been received by the agricultural chemicals division of Hercules Powder Co.

The U.S. Department of Agriculture accepted the following label directions for treating lettuce and cabbage crops with toxaphene:

On head lettuce, label directions call for a seven-day preharvest interval after application of toxaphene, along with instructions for the removal of outer leaves at harvest.

On cabbage, the toxaphene treatment interval before harvest has been modified. USDA has accepted label directions subject to a warning that no toxaphene application should be made on cabbage within seven days of harvest. Dosage directions on cabbage which had previously been accepted remain the same. Those directions hold that toxaphene dust and spray formulations may be applied on cabbage at a dosage rate of 2 lb. per acre of actual toxaphene applied as a dust and 1.2 to 1.6 lb. per acre applied as a spray.

California Pilot School Delayed

SAN FRANCISCO—A pilot training school scheduled to start in March under the sponsorship of the University of California has been postponed until June because of a scarcity of applicants.

Only eight or nine men applied for the course, and this was considered an insufficient number. Five of these are being instructed in flight training by Le Roy Lampson at Robbins, Cal. The demand for trained pilots is heavy in California, and the Agricultural Aircraft Assn. and its members are cooperating in publicizing the new university course in the hope of attracting a greater number of qualified students for the June classes.

MISSOURI PUBLICATIONS

COLUMBIA, MO. — Suggested spray programs for insect and disease control on apples, peaches and strawberries are listed in three recent publications of the University of Missouri.

Insects at Work On Young Cotton

ROBSTOWN, TEXAS—Though young cotton plants are still hardly peeping above the ground, thrips and aphids are already being found in many fields.

In order to make an insect control program effective, the Farm and Home Development Committee met recently in Robstown and made recommendations for early season control.

"When cotton reaches the four-leaf stage," the committee said, "control methods should be started, which means from two to four poisonings at weekly intervals."

The committee is composed of representatives from the extension service, FHA, and local agricultural leaders. It advised farmers to inspect their fields regularly and when more than 15 adult fleahoppers or nymphs are found on 100 terminal buds, the dusting or spraying should be started.

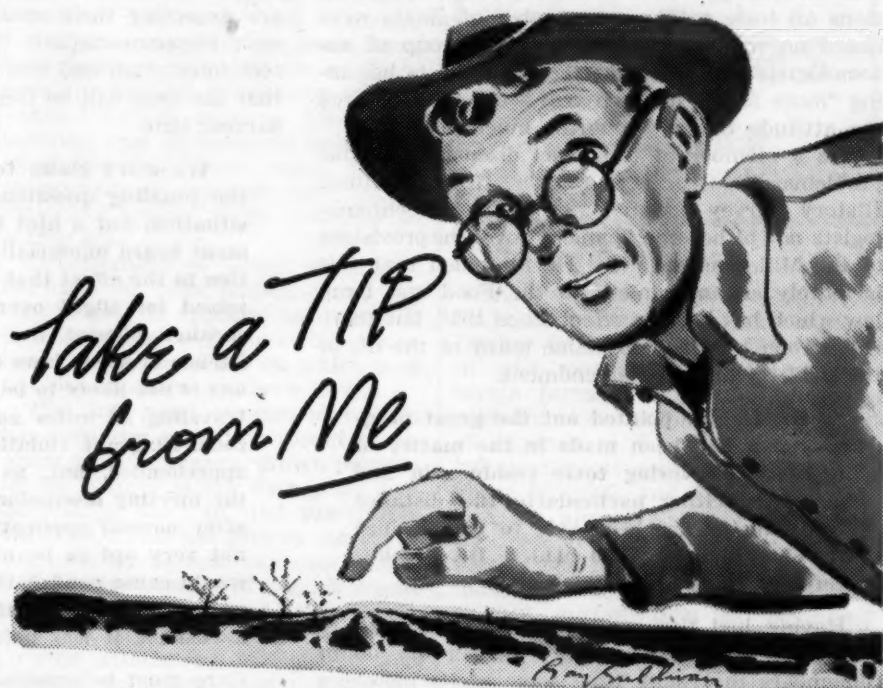
European Canker Makes Appearance In California Orchards

DAVIS, CAL. — European canker disease has made an appearance in some California apple orchards.

The disease was noted in the state as early as 1909, but caused serious damage for the first time in 1955, report plant pathologists Carl W. Nichols of the California Department of Agriculture and E. E. Wilson of the University of California, Davis.

The outbreak of European canker has been limited to the apple growing region of Sonoma County and are scattered as in other coastal counties north of San Francisco Bay. A survey showed that other apple growing regions of the state had not been affected.

In Sonoma County, several young trees in one orchard and many branches on bearing trees were killed by the disease.



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Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Western states.

ENTOMOLOGICAL QUANDRY . . .

What to Recommend for 1957 Is Question

Difficulties encountered by entomologists in various states in making insecticide recommendations that will control agricultural pests and still meet the residue tolerances set by law, are coming more and more sharply into focus as the spraying and dusting season approaches. Heated discussions on the subject are heard wherever entomologists meet.

The recent convention of the North Central Branch of the Entomological Society of America was an example. In a session devoted to discussions on toxic residues, a number of slants were heard on this question. While one group of entomologists declared that the situation is becoming "more fouled up each year," others registered the attitude that it "could be much worse."

As a member of the panel discussing residue problems, Dr. George C. Decker, Illinois Natural History Survey entomologist urged the entomologists not to become "panicky" over the provisions of the Miller amendment. He reminded that this is merely an amendment to the Food and Drug law which has been in effect since 1938, but there is a strong tendency to blame many of the ills of the industry onto the amendment.

Dr. Decker pointed out the great progress that has been made in the matter of legislation covering toxic residues in and on foods, citing particularly the distance the industry has been able to travel since the hearings of 1950 which Dr. Decker referred to as an "inquisition."

Having had the experience of attempting to testify at the hearings, Dr. Decker no doubt remembers the rough time some of its members gave anyone whose testimony tended to show that insecticides might be used without endangering public health. The Miller amendment, he said, is far more mild than would have been certain other laws that were proposed but not passed. With exercise of good judgment and common sense, he said, there should not be too much trouble in the 1957 and 1958 seasons.

Entomologists from other areas, however, in a question-and-answer session, declared that the rules under which they must operate, make it extremely difficult to give the farmers in their states completely safe recommendations. With limitations set on the use of methoxychlor, lindane and toxaphene in certain applications on forage crops and dairy animals, the entomologists were somewhat perturbed and a number indicated that the farmers will be inclined to take a chance and use these materials anyway.

Stirling Kyd, extension entomologist from Missouri, appearing as a member of the panel with Dr. Decker, said that farmers in his state regard it as absurd that greater amounts of residue are allowed on fruits and vegetables raised for human consumption, than is permitted on forage fed to livestock. He re-emphasized the fact that it is becoming increasingly difficult to make recommendations for the farmers in his state.

Probably one of the most heated subjects when it comes to a discussion of residues, surrounds that of a "zero tolerance" in milk. Justus C. Ward of the Pesticide Regulation Section of USDA, present at the Des Moines meeting, commented that any residue of a chemical on a crop for which no tolerance has been established, is illegal unless the chemical has been declared safe or has been exempted from the need for a tolerance.

But the question naturally comes up about this matter of "no residue." A sub-committee of the Food Protection Committee recently stated that

it could find no basis for proposing a fixed "technical zero," since the pharmacological differences between the various pesticides made a logical "zero" figure for one, potentially hazardous for another. It is thus evident that each pesticide must be considered separately on its own merits. A further step is to consider each use of each pesticide as an individual problem.

It follows, therefore, that there is a long way to go before all of these problems can be worked out. In the meantime, the farmers in every state are expecting their entomologists to come forth with recommendations that will control any insect infestation and will at the same time assure that the crop will be free from illegal residues at harvest time.

We don't claim to have an answer to the puzzling questions brought up by this situation, but a hint may lie in some comment heard unofficially at the ESA convention to the effect that no crop is likely to be seized for slight overages of residue. One speaker likened the situation to the existence of speed laws on the highway where one is not likely to be hauled into court for traveling 53 miles an hour in a 50 MPH zone. Flagrant violations will of course be apprehended, but, as was pointed out in the meeting discussions, residues remaining after normal applications of pesticides are not very apt to be of the magnitude that would cause confiscation of a crop. There is an area of judgment that should act as a cushion, it was pointed out.

Care must be exercised, of course, in making recommendations for use of pesticides for 1957-58, largely because so far it has not been decided who is responsible in the event of a spoiled crop. Entomologists throughout the country are trying to do a conscientious job, and certainly can't afford any degree of recklessness in advising their farmers about what kinds of pesticides to use, and how much and when.

The problem of exactly what course to take is a real one, and will have to be met with a lot of that valuable ingredient: horse sense.

Soil Moisture Tests Made

Interesting results are likely to be forthcoming from a unique test being conducted by the USDA in Ohio where a 65-ton block of earth is being used in lysimeter tests. It is yielding information on where water goes, what it does to soils and how crops use it. The experiment lends itself to further information about soil fertility and land management.

The block of ground, 1/500th of an acre in size, rests on scales which record its intake of moisture from all sources on a year-in-and-year-out basis, with automatic recordings made every ten minutes, accurately measuring the lightest dew or the heaviest rainfall.

USDA scientists are continuing to analyze information obtained from the lysimeter in order to widen the application of test results. With moisture, or its lack, being an important factor in the use of plant food in raising crops, these tests appear to have unusual significance.

Quote

"So far as we are aware, there have been no instances of chronic poisoning from residues. This speaks well for the caution that has been exercised by regulatory agencies and research and extension workers in Federal, State, and Industrial institutions responsible for the development and recommended use of insecticides."—E. F. Knipling, Entomology Research Div., USDA.



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Northward Movement Of Cereal Rusts Now Under Way

MINNEAPOLIS — The northward movement of cereal rusts from overwintering areas in southern U.S. has begun, according to Donald G. Fletcher, executive secretary of the Rust Prevention Assn., Minneapolis.

Infections resulting from spores blown southward last fall survived the winter and are now providing an important source of rust to be spread northward by spring winds, Mr. Fletcher said.

The amount of rust surviving can never be reliably used to estimate or predict whether rust epidemics will develop later in the Upper Midwest, Mr. Fletcher stated. Large amounts of rust in the south early in the spring do not necessarily result in epidemics in areas to the north because breaking of one or more of the many links in the chain of events necessary to produce an epidemic may limit rust development.

Recently both crown rust of oats and leaf rust of wheat have increased rapidly in coastal regions of Texas, Louisiana, Mississippi and Alabama. Trace amounts of these rusts have been reported as far north as Sherman, Texas, and Texarkana at the Texas-Arkansas border. Conditions favoring rust increase on lush crops along the Gulf Coast were halted temporarily by freezing temperatures extending almost to the coastline on March 8-9.

Development of wheat stem rust has thus far been limited along the Gulf Coast. It appears that race 15B is among the overwintering races, based on the varieties on which rust has developed in southern Texas.

The Gulf coast acreage of cereals has expanded greatly in recent years. Much of this acreage, grown primarily for pasture rather than grain production, is sown to rust susceptible varieties. This has greatly increased the area where rust can overwinter.

Extensive acreage of Selkirk wheat in Minnesota, North and South Dakota should provide adequate resistance to rust attacks by biotypes of 15B common in recent years. However, new biotypes of 15B and other races that can attack Selkirk were present in small amounts in these three states last summer.

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State Farm Income

SAN FRANCISCO — California leads the nation in farm income. During 1956 more than \$2.8 billions in cash receipts were given California farmers, according to a report by the California Department of Agriculture. Last year the state led its nearest competitor, Iowa, by about \$650,000, and Illinois, third in line, by almost \$900,000. California was second only to Arizona in realized gross income and realized net income per farm. Gross income was \$23,044 during 1956 as compared with Arizona's \$37,622, and third place Delaware with \$18,320. Net income for the three leading states, the Department of Agriculture reported, was \$11,892 for Arizona farms, \$8,411 for California farms, and \$3,975 for Delaware farmers.

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ALABAMA CONFERENCE—Above are scenes from the recent Alabama Pest Control Conference, held at Alabama Polytechnic Institute at Auburn. The top photo shows those who presided over the conference. From left to right are L. M. Ware, horticulture department head; Dr. F. S. Arant, zoology-entomology department head, and Dr. Coyt Wilson, assistant dean and associate dean and associate director, all of the API School of Agriculture and Agricultural Experiment Station; John R. Cook, president, Alabama Pest Control Assn., Decatur, and Wade Allen, California Spray Chemical Corp., Troy, Ala. Other presiding officer not present was Mrs. E. R. McLendon, Earlean's Nursery, Birmingham, Ala.

Center photo shows officers of the Alabama Association for Control of Economic Pests, all of whom were elected to a second term. From left to right, are Dr. W. G. Eden, API entomologist, secretary-treasurer; George Williamson, Agricultural Chemical Service Co., Montgomery, president, and Urban L. Diener, API plant pathologist, vice president.

Below, W. A. Ruffin, API Extension Service entomologist, receives plaque honoring him for 30 years of outstanding service in the field of insect pest control from J. L. Lawson, associate extension director. The presentation was a highlight of the annual banquet of the Alabama Association for the Control of Economic Pests. A story of the conference appeared on page 36 of the March 4 issue of Croplife.

Cooperative to Build Plant in Washington

QUINCY, WASH.—Pacific Supply Cooperative chemicals division officials visited Quincy, Wash., recently while developing plans for construction of a plant for blending fertilizers, minor elements and soil insecticides.

The facility will be built on the eastern edge of Pacific's Quincy property and present plans call for a truck-height building with storage for bulk and bagged fertilizers, facilities for loading bulk fertilizer on spreader trucks and additional facilities for the firm's liquid fertilizer program.

Distribution Plant Planned in Washington

POMEROY, WASH.—Columbia Farm Supply has applied for a building permit to set up a fertilizer distribution plant on the Lester Martin property east of the swimming pool here. Work will consist of erecting two aqua tanks and two pressure tanks, putting sand and gravel on the site and remodeling a small building for an office.

HEADS STATION

STILLWATER, OKLA.—Olin D. Smith, 1954 graduate of Oklahoma A&M, has been appointed superintendent of the Wheatland conservation experiment station at Cherokee, Okla.

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